IMPLEMENTATION PLAN / FACT SHEET
FOR THE
VOICE SWITCH BY-PASS (VSBP)

CIP # 22-12
POST KDP-4

DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

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Initiated By: AND-320

FOREWORD

This Implementation Plan/Fact Sheet (IP/FS) provides management direction, technical information and quidance to all level of the FAA that are involved in the Voice Switch By-Pass system (VSBP) program implementation. The IP/FS is provided in place ot the Project Implementation Plan (PIP) in accordance with the FAA Order 1810.1F, chapter 1, paragraph 1-6, i.e., Acquisition programs funded by the F&E or RE&D appropriations with a total acquisition cost of less than $5 million will be exempt from the provisions of the order...

This IP/FS identifies and describes specific requirements, events, tasks and activities to be accomplished, as well as project responsibilities that are necessary to implement the program. The procedures and responsibilities of this project were developed within the bounds of Federal Aviation Administration (FAA) directives for the VSBP Program. Management resopnsibility for this program is currently assigned to Voice Switching and Recording Products Team, AND-320.

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DOCUMENT CHANGE NOTICE

1. Originator Name and Address	2. [ ] Proposed [X] Approved	3. Code Identification	4. Standard No.
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This notice informs recipients that the standard identified by the number (and revision letter) shown in block 4 has been changed. The pages changed by this DCN (being those furnished herewith) carry the same date as the DCN. The page numbers and dates listed below in the summary of changed pages, combined with non-listed pages of the original issue of the revision shown in block 4, constitute the current version of this specification.

13. DCN No.	14. Pages changed	S*	A/D*	15. Date
	This document is the initial issue.			July 1, 1996

S* = Indicates Supersedes Earlier Pages *A = Indicates Added Page *D = Indicates Deleted Page

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TABLES AND FIGURES

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1.0 GENERAL

1.1 Purpose of Document

This IP/FS provides management and technical guidance for the implementation of the Voice Switch By-Pass system (VSBP) and is to be used for all VSBP technical and resource planning activities.

1.2 Scope Of Document

This IP/FS is restricted to all aspects of VSBP implementation, beginning with the completion of site worksheets and site preparation and ending with equipment maintenance, training, and configuration management (CM).

1.3 Distribution

This document is distributed to branch level in the office of the Product Lead Office of Acquisition, Director FAA Technical Center, Program Director Office of Air Traffic System Development, Program Director Office of Communications, Navigation and Surveillance (CNS), Program Director for System Architecture and Program Evaluation, Director Air Traffic Services, and Director Airways Facilities Services; to the Regional Airway Facilities, Air Traffic, Logistics Divisions, and Service Maintenance Offices (SMO).

1.4 Definition of Terms

Appendix C contains definitions of terms, abbreviations, and acronyms used in this document.

1.5 Cancellation

N/A.

1.6 Authority to Change

Authority to change this IP/FS rests with the Integrated Product Team, Product Lead for Voice Switching and Recording, AND-320. ANS-700, Program Implementation Division, with the approval and concurrence of the Integrated Product Team Leader (IPT) Leader, may issue changes, updates and revision to this document.

1.7-1.19 Reserved

1.20 Status Assessment Overview

Risks are identified in each appropriate section.

2.0 PROJECT OVERVIEW

2.1 Synopsis of Mission Need

The VSBP system is to provide the minimum necessary air/ground communications to continue safe air traffic operations in the event of a voice switch failure. The VSBP will facilitate uninterrupted emergency air-to-ground communications at Airport Traffic Control Tower (ATCT) and Terminal Radar Approach Control (TRACON) facilities operating under Instrument Flight Rules (IFR).

2.1.1 Operational Needs

Full or partial failures of terminal voice switches can have a drastic effect on operations, particularly air/ground communications, The time required to reconfigure the switch or for the controller to move to another position to reestablish air/ground communications can take on the order of minutes. Several terminal facilities have developed and installed circuitry to enable the controller to bypass the switch to gain immediate access to the assigned radios: however, the variation in design, equipment and functionality have resulted in dissimilar capabilities at different locations. The VSBP is a standard designed system that provides the minimum necessary critical air/ground communications to continue safe operations at terminal A/G communications facilities while facilitating system wide configuration management and control..

The VSBP allows for three types of circuits in the VSBP mode. The circuits types include:

Type 1 - enables one operator to communicate on one specific frequency.

Type 2 - enables one operator to communicate on two specific frequencies.

Type 3 - enables two operators to communicate on one specific frequency.

2.2 Functional Description

The VSBP system is used when critical A/G communication is lost. The controller manually activates the VSBP system for a designated frequency be removing the headset/handset plug from the primary voice switch console and inserting the headset/handset into the separate VSBP jackbox module. This manual plug insertion causes a battery of relays to switch the designated A/G Transceiver over to the VSBP system. The VSBP system allows for A/G communication, monitoring and recording. Figure 2-1 illustrates the connectivity of the VSBP system.

When the VSBP is activated, the A/G audio that was being recorded through the voice switch will be switched to the VSBP and legal recording will continue. Be advised, however that when activated at a position, only A/G communications is recorded. Recording will be on the normal position channel, additional recording channels are not required for the VSBP System.

The selection of frequencies to be bypassed is at the discretion of the facility. The frequencies/radios assigned to a position selected for VSBP capability are hardwired. Any changing of frequency or transceiver assignment will have to be done at the patch panel.

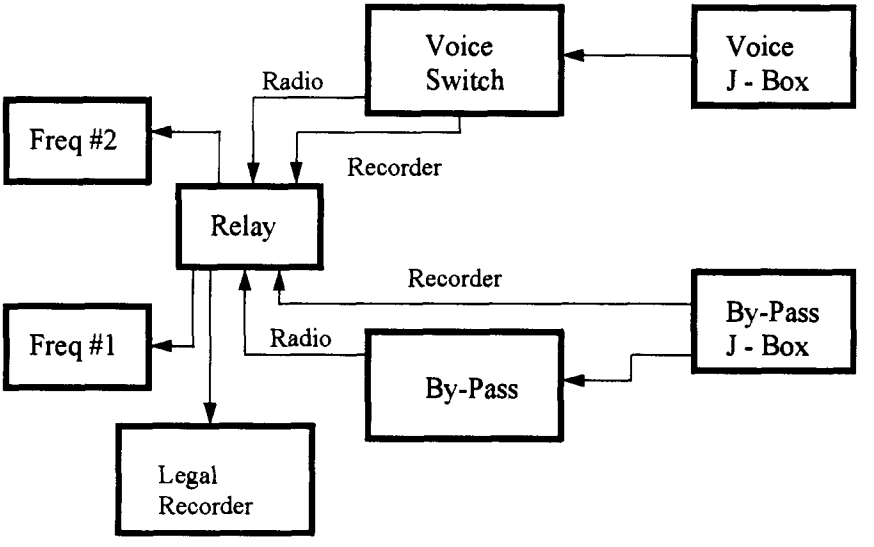

Figure 2-1 VSBP Functional Block Diagram

2.3 Program History and Status

The VSBP was designed to simultaneously provide access to A/G radio communications via a "jack box" located at designated ATC consoles and designed to disable normal voice switch equipment circuitry in the event of a failure of the voice switch.

The VSBP is a Terminal Voice Switch Replacement Program (TVRS), Capital Investment Plan #22-12. The TVSR program defined the need of the terminal voice switch and as such the Mission Need Statement (MNS) associated with TVRS is the appropriate need statement for the VSBP system. A memorandum from the Manager, Communication System Engineering Division, ASE-200 defined the operational needs of the VSBP system, eliminating the development of a specific Operational Requirements Document for the VSBP.

Acquisition Review Committee (ARC) approval (KDP-2), signaling entry into phase 3 (development phase), was conditionally granted in February 1994. A Procurement Readiness Review (PRR), was completed in June 1994, and followed by the release of the VSBP Request for Proposals (RFP) in July 1995. The contract was awarded in August 1995. First Article (factory) Test was completed in February 1996 when the first operational FAA switch was fielded and shake-down tested in Montgomery, AL in April 1996.

2.4 Program Milestones

See figure 2-2, VSBP Milestones, for program level milestones. NAS implementation milestones are listed in figure 11-1, VSBP NAS Implementation Schedule, found in section 11.1.

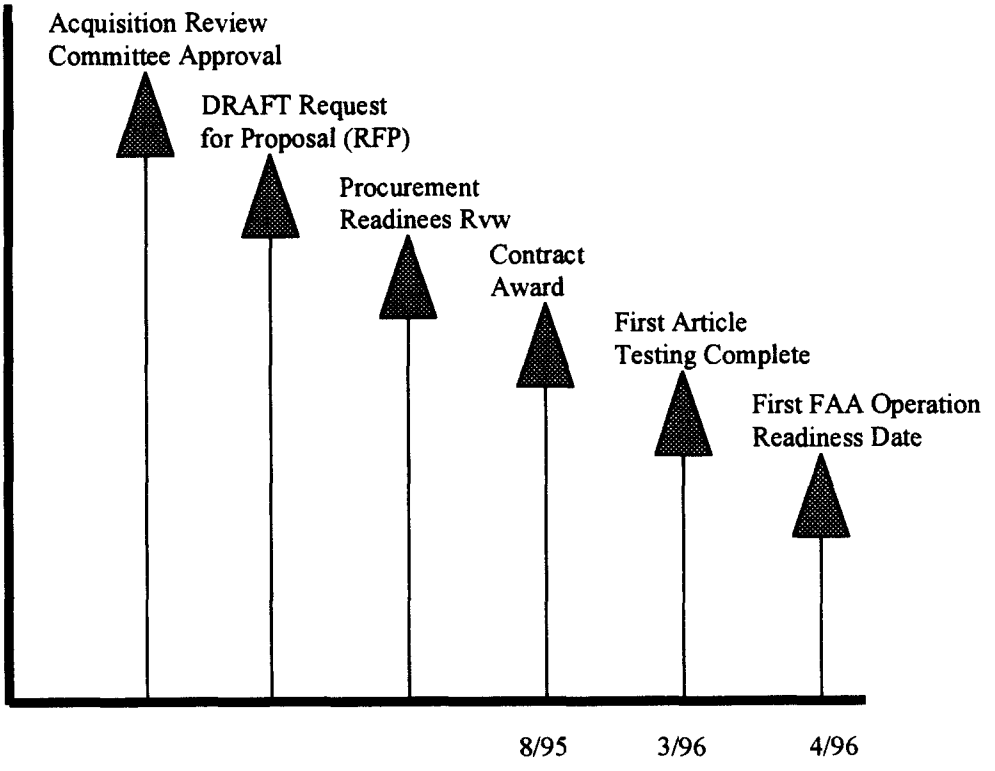

Figure 2-2 VSBP Milestones

2.5 Interagency Involvement

2.5.1 Department of Defense

The VSBP program has been briefed to the DOD, it is expected that VSBPs will be procured under this contract.

2.5.2 National Weather Service

There is no inter-agency involvement with the National Weather Service.

2.5.3 U.S. Customs Service

There is no inter-agency involvement with the U.S. Customs Service.

2.5.4 Drug Enforcement Agency

There is no inter-agency involvement with the Drug Enforcement Agency.

2.5.5 Other Agencies

There is no other inter-agency involvement.

2.6-2.19 Reserved

2.20 Status Assessment

The funding for over 200 VSBP systems has been approved. All systems will be delivered over a 36 month period, between June of 1996 and 1999. The site prep money is included in the $30,000 TVSR money.

3.0 AIRWAY FACILITY OPERATIONS

3.1 Summary of Maintenance Operations Impacts

The maintenance concept for the VSBP system throughout its expected year life-cycle (same as voice switch) will be FAA maintained and logistics supported (FMLS).

3.1.1 Transitory State

There are no know impacts to AF operations due to site implementation.

3.1.2 Operational State

No changes to AF operations are anticipated from operational use of the VSBP in the NAS, with the exception of a complete failure of the voice switch. An operational handbook will be provided briefly outlining the use of the VSBP. AT personnel should perform periodic checks of the VSBP as defined in the appropriate publications.

3.2 Airway Facility Procedural Changes

3.2.1 Preventive Maintenance

Minimal changes to AF maintenance operations, to include the support for the VSBP, are anticipated. VSBP site level maintenance will be provided by trained FAA on-site technicians. AF will be required to perform an operational availability check of each VSBP as defined in the Voice Switch/VSBP maintenance manuals.

3.2.2 Corrective Maintenance

No changes to the AF corrective maintenance approach will be required as a result of the VSBP. Corrective maintenance will be accomplished by trained FAA technicians. The FAA Logistics Center (FAALC) will be responsible for managing the depot repair program for the VSBP beginning with Government acceptance of the VSBP.

3.2.3 Software Maintenance

There is no Software maintenance to be performed on the VSBP equipment.

3.2.4 Systems Operation/Monitoring

There will be no Remote Monitoring capability associated with the VSBP.

3.2.5 System Certification

AOS-200 has determined that the VSBP service will be certified. The VSBP will be fully consistent with the current system certification procedures for terminal Air Traffic Control (ATC) operations and maintenance. No changes to systems certification are anticipated. In the event requirements change, AOS-200 will make any updates to system certification procedures as necessary.

3.2.6 Personnel Certification

VSBP personnel certification will be conducted in accordance with standard FAA practice. No changes to personnel certification procedures are anticipated.

3.3 Facilities and Equipment (F&E)

AF F&E personnel will be involved in all phases of VSBP site implementation. F&E personnel will provide and manage electronics engineering resources and will perform all site installation activities. The VSBP equipment will arrive assembled, tested at the factory and ready for immediate installation. A technical instruction manual (TIM) and instructional video are included with the equipment delivery and should be used to facilitate proper installation. During the VSBP implementation, AF F&E personnel will perform the following site preparation activities:

(1) Provide the program office with specific site information in lieu of a formal site survey.

(2) Establish a configuration baseline for each site which satisfies floorspace, location and power requirements.

(3) Prepare site plans and procedures necessary to receive and support he installation of the VSBP equipment.

(4) Perform site preparation including site engineering and planning; update facility documentation, installation and routing of cables, installation of mounting brackets and console modifications (if necessary).

AF F&E will also be responsible for conducting the JAI and updating personnel and equipment certification requirements to reflect VSBP equipment, as well as declaring Initial Operating Capability (IOC) and the Operational Readiness Date (ORD) for the VSBP system.

AF F&E personnel will provide regional support to implementation activities at VSBP sites. During the pre-Installation and Checkout phase (Pre-Inco), AF F&E personnel will provide electronics engineering resources, coordinate training for other F&E personnel, conduct site installation. During VSBP installation, AF F&E personnel will initiate any Program Trouble Reports (PTRs) during the initial operation phase of implementation.

3.4 Systems Maintenance

Maintenance and logistics support for the VSBP system will be provided by FAA AF Sector and the logistics center (FAALC).

According to AFZ-200, current voice switch staffing standards are sufficient for VSBP until the standards are re-evaluated.

3.5-3.19 (Reserved)

3.20 Status Assessment

The VSBP is being procured as an NDI system. To date, no AF risks have been identified.

4.0 AIR TRAFFIC OPERATIONS

4.1 Summary of AT Operational Impacts

4.1.1 Transitory State

There are no know impacts to AT operations due to site implementation.

4.1.2 Operational State With the VSBP system, the controller will be able to manually access a designated frequency by jacking his/her headset/handset plug into a separate VSBP jackbox module attached to the console. The voice activated transmission (VOX) headset will perform with the VSBP system as it does with the voice switch. The VSBP does not have lockout capability. Activating the VSBP enables position recording of the A/G communications only. While the VSBP is activated the A/G audio will be disabled from the loudspeaker.

4.2 AT Procedural Changes

4.2.1 ATC Operational and Management Procedures

VSBP will add little or no changes to national AT operational and management procedures, however, there may be some changes in local procedures.

4.2.2 Flight Procedures/Standards

The VSBP will be fully consistent with the current flight procedures and standards of terminal ATC communications. No impact on flight procedures or standards is anticipated.

4.2.3 Administrative and Management Procedures

AT personnel, as requested by AF, will call AF Sector to report or further describe a VSBP malfunction.

4.2.4 Software Verification Procedures

N/A.

4.2.5 Inter-facility Procedures

N/A.

4.2.6 Personnel Certification Procedures

The VSBP will be fully consistent with the current personnel certification procedures of terminal ATC communications. No changes to personnel certification procedures are anticipated.

4.2.7 System Backup/Cutover Procedures

The VSBP is the backup system, in the event of a failure of the voice switch. The cutover procedures will be defined in detail in the operational handbook to be delivered with the VSBP system.

4.3 AT Implementation

Regional AT personnel will be required to coordinate a delivery schedule for VSBP sites with ATR-120, System Plans and Requirements Service, Terminal Branch. In addition, AT personnel will help to define AT operational requirements, determine new plans and procedures to be used after implementation, oversee the preparation of site survey documentation, and participate in, or monitor, FAA operational testing at each site. All AT operations at the site and controller involvement will be coordinated through the AT manager prior to system installation.

4.4-4.19 (Reserved)

4.20 Status Assessment

There are no know AT operational risks associated with the VSBP system implementation.

5.0 SYSTEM CONFIGURATION AND ENGINEERING

5.1 NAS Level Architecture

5.1.1 NAS Target State

5.1.2 Inter-program Interfaces

The VSBP will interface with government-furnished Air-to-Ground (A/G) communications equipment (fixed-frequency transmitters and receivers).

5.1.2.1 Legal Voice Recorders

The VSBP will provide connectivity to legal voice recorders for the recording of all air-to-ground communications at each operational position. In the By Pass mode only A/G communication is recorded.

5.2 Platform Architecture

The VSBP will be installed and used as part of the terminal platform in two environments including Air Traffic Control Tower (ATCT) cabs and Terminal Radar Approach Control (TRACON) facilities.

5.3 Subsystem Level Architecture

5.3.1 Hardware

The following identifies minimum hardware required for each site to achieve full and minimum operational functionality:

Jackbox Module The jackbox module contains the receptacles for the P10 handset/headset plugs, and the receive and sidetone audio volume control knob.

Cables The VSBP uses seven radio cables per shelf unit, and one jackbox cable per circuit with the exception of a Type 3 circuit which requires two jackbox cables. All cables connect into the back-plane of the VSBP rack unit and/or the two demarcation blocks mounted in the rack.

Equipment Rack Houses switching equipment.

Relays The VSBP relays transfer control and signals between the ICSS and the VSBP.

Power Supply The Power Supply provides 28VDC to the Tellabs equipment bucket.

Fuse Block The fuse block protects the tellabs equipment from over current conditions.

5.3.1.1 Position Equipment

VSBP position equipment consists of jackbox modules provided for each designated controller console. There is one module for each type 1 and type 2 circuit, and two modules for each type 3 circuit. The position equipment will be sized to fit in both tower and TRACON consoles.

5.3.1.2 Supervisor's Workstation

N/A

5.3.1.3 Maintenance Workstation

N/A

5.3.1.4 Reserve Power System

A reserve power system will be provided with the VSBP. The reserve power system will provide adequate electrical (A/C) power in the event of any temporary power failures and "brownouts".

5.3.1.5 Supervisory Recording

N/A

5.3.2 Software

N/A

5.3.3 Physical Specification

VSBP Component*	Quantity	Dimensions (l x w x h)
Equipment Rack**	1	30" x 36" x 72"
Radio Cables	7	NA
Jackbox Cables	1	NA
Jackbox	1-4	1 3/4" x 4" x 7"

*Data denoted are actuals based on equipment specifications.

**Where available rack space exist the VSBP equipment is mountable in a standard equipment cabinet. Where rack space is not available a cabinet will be order to house the system components.

5.4 -5.19 (Reserved)

5.20 Status Assessment

There are no known risks in the VSBP system configuration and engineering.

6.0 PHYSICAL FACILITIES

6.1 Real Estate

6.1.1 Real Estate Requirements

No new real estate is required for the VSBP system implementation.

6.2 Heating, Ventilation, and Air Conditioning (HVAC)

6.2.1 HVAC Requirements

VSBP system constraints, with respect to temperature and humidity ranges is compliant with those HVAC requirements set forth in FAA-STD-032, Design Standards for National Airspace System Physical Facilities, paragraph 3.5.2, which specifies the same environmental requirements for spaces housing communications equipment.

6.2.2 HVAC Plans

The ATCT cabs and TRACONs where the VSBP will be deployed are already temperature and humidity controlled environments. Modifications to existing cooling capability are not anticipated based on the minimal additional heating loads generated by the VSBP equipment.

6.3 Cables

6.3.1 Cable Routing/Raised Floor Requirements

Cable access between the VSBP backroom equipment cabinet and controller console position equipment will be required. Site specific cabling requirements will be determined during the completion of the site worksheet at each facility.

All interconnection cables and connectors required for factory testing site installation, cutover, operation, and maintenance will be compatible with both under floor and overhead distribution and cable facilities provided by the government. Cabling and wiring will comply with 3.3.1.3.4.26 of FAA-G-2100; National Electric Code, NFPA-70; and FAA-C-1217. All interconnecting cables will be plenum rated in accordance with NFPA-70 725-38 and 800-53, for cabling in raceways.

Audio signal cable end terminations will be solderless, quick-disconnect terminal blocks or mass termination connectors. Connectors that have insert-type contacts may be loaded with only the contacts actually used plus spares.

All AC power cables and wiring within the VSBP shall be isolated from sensitive voice and signaling circuits.

6.3.2 Cable Plans

Site specific cabling plans will be developed locally. VSBP cabling will be shipped with the system's H/W components. Cables will be assembled and tested prior to shipment.

6.4 Power

6.4.1 Power Requirements

The VSBP system requires a single 115 VAC single phase circuit. The facility will provide cabling from the facility power source to the VSBP cabinet mounted AC receptacle. The VSBP will draw no more than 400 VA of AC power per installed position under any load condition.

6.4.2 Power Plans

The VSBP will be connected to the facilities electrical power through the critical bus. The reserve power supply delivered as part of the VSBP backroom equipment will provide electrical power in the event of a temporary power interruptions. The reserve power system will provide a temporary bridge and power reserve for short term failures and "brownouts", allowing graceful termination of ATC operation in the event of a long term power failure, and conditioning of the government furnished power supply in case it is out of tolerance. The reserve power supply will provide power for backroom equipment and position equipment for a minimum of 30 minutes. The VSBP will provide visible indication at the UPS of transition to reserve power.

6.5 Physical Safety and Security

6.5.1 Security and Safety Requirements

There are no environmental requirements for the VSBP system.

6.6 Environmental/HAZMAT

6.6.1 Environmental Requirements

There are no environmental requirements for the VSBP system.

The VSBP will be installed in new facilities or facilities in which new ICSS equipment has recently been installed, therefore all HAZMAT conditions will have previously been addressed.

6.6.2 Environmental Monitoring Plans and Procedures

No environmental monitoring plans and procedures are required for the VSBP system.

6.7 Grounding, Bonding, Shielding, and Lightning Protection

6.7.1 Grounding, Bonding, Shielding, and Lightning Protection Requirements

The VSBP will require a grounding bus for chassis ground at all installations. AC power ground is provided through the power conditioning system.

6.7.2 Grounding, Bonding, Shielding, and Lightning Protection Plans

The government will provide the single-point earth ground for AC power ground at all installations. The VSBP reserved power supply will ground all AC components to a common ground derived from the AC

power system. The VSBP will be shielded against high voltage damage due to lightning surges in accordance with FAA-STD-019 and FAA-STD-020.

6.8 Space

6.8.1 Space Requirements

Except for the VSBP position equipment, all VSBP equipment will be located in the facility communications equipment room (or other designated area) and outside of the ATC operation areas.

The VSBP space requirements/dimensions are seven (7) inches per bucket and ten (10) inches per reserve power supply within a standard 19" equipment rack. If available rack space does not presently exist to house the VSBP system then a total four Sq. Ft. for a standard 19" equipment rack plus clearance/access space, is required in the back equipment room.

6.8.2 Space Allocation Plans

Site plans will be developed by each site and will be used to determine space requirements and identify any maintenance access requirements.

6.9 Construction and Modification

6.9.1 Construction and Modification Requirements

No construction and modification requirements have been identified to support the VSBP system.

6.9.2 Construction and Modification Plans

No construction and modification plans are required to support the VSBP system.

6.10 Telecommunications

6.10.1 Telecommunications Requirements

The VSBP will require access to A/G interfaces at a government distribution frame to establish communications capabilities offered by the voice switch.

6.11-6.19 Reserved

6.20 Status Assessment

There are no known physical facilities risks identified at this time.

7.0 FINANCIAL RESOURCES

7.1 Summary of Funding Plan

AND-320 will fully fund the VSBP implementation program, coordinate logistics support funding with AFR, and address future funding issues.

Appendix D, Site Deployment Schedule, lists the proposed VSBP sites.

Funds for site preparation activities will be provided by AND-320, for those sites not having previously received TVSR site prep. A Project Authorization (PA) for $1,500.00 will go out to the region prior to installation if required.

Follow-on logistics support will be coordinated by AFR-302, Communications Life Cycle Division, with AML-200 (FAALC) NAILS Management Division). AML-200 will ensure that the FAA Logistics Center budget includes the funding for depot level support for the life cycle of the VSBP equipment.

7.2 Facilities and Equipment (F&E) Budget

7.2.1 F&E Budget Requirements

VSBP is fully funded to meet the planned objectives.

7.2.2 Summary of F&E Funding Status

F&E budgetary authorizations are as follows:

FY 95	$
FY 96	$
FY 97	$

7.3 Operations and Maintenance (O&M) Budget

The AF site technician will be responsible for fault isolating and correcting VSBP maintenance problems to the line replaceable unit (LRU) level both during and after the warranty period. FAA site technicians will be funded using OPS dollars allocated to the regions for site maintenance activities.

The commercial Tellabs equipment used in the VSBP has a five-year manufacturer's warranty. The DME manufactured jackbox, backplane, and cables will be supplied with a three-year warranty. Follow-on maintenance on VSBP reparables will be provided via either contractor depot support or extended contractor warranty. The FAA Logistics Center will be responsible for budgeting for support of the VSBP after the appropriate warranty period expires.

7.3.1 O&M Budget Requirements

The O&M budget includes requirements for depot repair of LRUs, and stock replenishment of consumables and LRUs. Projected O&M funding requirement for maintenance and logistics support for the 200 VSBP sites are as follows:

FY	95	96	97	98	99	00
		$0	$35K	$40K	$40K	

Depot Maintenance is yet to be determined. (Warranty will begin expiring three years after Government acceptance of the first site)

Spares - AND-320 is procuring ($30,000) the initial depot spares required by FAALC in FY96. Budget for replenishment spares for the remaining life cycle will be determined by FAALC.

7.3.2 Summary of O&M Funding Status

O&M budget funding requirements will be identified in the FAALC budget.

7.4 Research, Engineering, and Development (RE&D) Budget

7.4.1 RE&D Budget Requirements

There is no RE&D funding required for the VSBP system.

7.5-7.19 Reserved

7.20 Status Assessment

There are no funding risks associated with the VSBP system implementation.

8.0 HUMAN RESOURCES

8.1 Human Resource Management

8.1.1 Impacts of Acquisition on Human Resource Management

8.1.1.1 Personnel Security

The VSBP system will not affect FAA personnel security.

8.1.1.2 Relations With Local Communities

The VSBP system will not affect relations with the local communities.

8.1.1.3 Relations With Aviation Community

The VSBP system will not affect relations with the aviation community.

8.2 Staffing

8.2.1 Impacts of Acquisition on Staffing

8.2.1.1 Operational Workload

Air Traffic (AT) No increase in AT operational workload is expected as a result of VSBP implementation.

Airway Facilities (AF) AF operational workload will be affected in the FAA Logistics Center, NAV/COM Support Engineering Branch, and AF Sector Maintenance. Descriptions of the changes to workload in these organizations are given below.

Depot level maintenance and supply support programs will be managed by the FAALC for the life cycle of the VSBP.

Second level engineering support will be accomplished by NAV/COM Support Engineering Branch, AOS-260, a tenant organization at the Aeronautical Center.

Site level maintenance will be accomplished by FAA electronic technicians experienced in switching systems and computer interfaces

8.2.1.2 Implementation Workload

VSBP implementation will affect workload in the regions for Air Traffic (AXX-5XX), Sector Maintenance (AXX-460), Facilities and Equipment (AXX-450), and Regional Associate Program Manager (AXX-420) personnel. Increases will focus around site preparation, system installation, and testing activities, as described below.

Site Survey/Site Preparation Site surveys performed by the FAA will be overseen by regional F&E personnel (AXX-450). Site preparation activity following the site survey will be overseen by regional F&E personnel. The Technical On-site Representative (TOR) will coordinate all site survey and preparation activities and will act as liaison to the Contracting Officer's Technical Representative (COTR).

System Installation System installation will be performed by FAA F&E personnel. AXX-45X will coordinate the installation activities. An installation procedural guide will be provided at or before system delivery.

Test and Evaluation All FAA Test and Evaluation (T&E) activities have been completed by lead region AT and AF, AOS-260, and headquarters personnel .

8.2.2 Staffing Plans

AFZ-200 determined that the current AF staffing standards for the VSBP will be sufficient until such time as the overall staffing requirements are reviewed and standards updated.

8.2.3 Staffing Schedule

Refer to paragraph 8.2.2.

8.3 Training

Contractor and government representatives will participate in a Training Guidance Conference to review training task analysis, contract training plan, format for training deliverables, schedules, training locations, Commercial-Off-The-Shelf (COTS)/Non-Developmental Item (NDI) training materials.

8.3.1 Training Program

Training will consist of a contractor developed video taped training package that demonstrates operator and maintenance activities for the VSBP system. The training will be referenced to the installation, operation, maintenance (IOM) manual.

8.3.1.1 VSBP Hardware Maintenance Training

The contractor developed video taped training package will satisfy the initial training requirements for the AF site technician. Maintenance training on the VSBP will be incorporated into the voice switching maintenance courses taught at the FAA Academy.

8.3.1.2 Engineering Support Services Training

AOS-260 has determined that there is no requirement for an engineering support services (second level engineering support) course for the VSBP.

8.3.1.3 Depot Maintenance Training

The VSBP components are delivered with manufacturers' warranties. There are no plans at this time to develop a depot maintenance training course.

8.3.2 Training Support

The contractor will prepare, publish, and distribute all training deliverables required by the contract to the Government for approval.

8.3.3 Personnel Skills

Electronics technicians experienced in switching systems and interfaces, and peripheral equipment will be required to support the VSBP system. Knowledge of AT operations or AF maintenance procedures are a prerequisite for personnel undergoing VSBP training. Personnel skills needed for each type of VSBP training are listed below.

8.3.3.1 VSBP Operator Training (Video)

Participants will be government AT operator/supervisor personnel familiar with AT operations and procedures.

8.3.3.3 VSBP Hardware Maintenance Course

The VSBP Hardware Maintenance course will require participants to be AF electronics technicians or engineers with experience in repair of communications switching equipment. Participants will have a background in basic electronics and will have completed the technical training courses.

8.3.3.4 Depot Maintenance Training

N/A

8.3.4 Training Quotas

N/A. Initial AT/AF training will be provided via the contractor developed video-taped training package. Attrition training for AT will be conducted by the sites using the video tape. Attrition training for AF technicians will be incorporated into the communications switching maintenance courses taught at the FAA Academy.

8.3.5 Training Schedule

N/A

8.4-8.19 Reserved

8.20 Status Assessment

No risks associated with human resources have been identified to date. Detailed information concerning implementation workload, staffing plans and schedules, and training schedules and quotas will be dependent on the final number, location, and delivery schedule of sites designated to receive VSBP equipment.

9.0 TEST AND EVALUATION

9.1 Overview of Test Requirements

The VSBP test program is comprised of contractor performed developmental and production testing and government performed operational testing. The first VSBP system produced underwent extensive developmental, production, and operational testing at the factory, FAA Technical Center, and first site (Montgomery, AL). Subsequent core requirements for VSBP system underwent abridged production, developmental, and operational testing.

9.1.1 Government Test Program

The government test program involved operational testing of the first production VSBP core requirements. Government operational testing occurred serially from Integration to Operational, to Shakedown testing. Descriptions of operational testing are given below.

9.1.1.1 Operational Test and Evaluation (OT&E)/Integration Test

OT&E/Integration testing will verify the NAS end-to-end performance as defined by the system and subsystem level requirements in NAS-SS-1000, and ensure that the VSBP does not adversely affect performance in the NAS. This testing examined the interface between the VSBP and the NAS environment in which it operates. NAS-SS-1000 requirements affected by changes to the core VSBP system will be investigated. OT&E/Integration testing was conducted successfully by ACT-340 on the first system at the FAA Technical Center (FAATC).

9.1.1.2 OT&E/Operational Test

OT&E/Operational testing, conducted on the first system by ACT-340 at the Technical Center, verified the operational effectiveness and user suitability of the VSBP. This testing was conducted in a realistic environment to ensure that system requirements can be evaluated effectively by Air Traffic (AT) personnel in the tower and TRACON environments.

9.1.1.3 OT&E/Shakedown Test

OT&E/Shakedown testing is similar to the OT&E/Operational test, but was conducted at the first field site to verify the overall functionality of the VSBP and its supporting elements. Testing verified both AT operational and AF supportability and maintainability procedures. Field Shakedown testing, similar to the OT&E/Shakedown testing, on the VSBP system, will be conducted at all subsequent sites by the FAA.

9.1.2 Contractor Test Program

Pre-Production System Test

The Pre-Production System Test, performed on the first production VSBP system was a comprehensive verification of the VSBP design. This was accomplished at the contractor's facility, and used contractor supplied personnel, test equipment, test jigs, interface equipment, and any simulator subsystems required. The test procedures were developed by the contractor and approved by AND-320. Specification

requirements were tested including functional, physical, performance, and interface requirements, as well as compliance with industry standards.

Factory Acceptance Test and Evaluation (FAT&E) The Production Acceptance Test (PAT), also known as the Factory Acceptance Test, will be performed on all Production VSBP systems. The PAT will test critical functional and performance parameters selected from the First Article Test. The first VSBP will undergo a First Article Test, followed by a PAT to verify PAT procedures. Follow-on VSBP systems will undergo only the PAT to verify aspects of the system that could possibly be affected by the production process. Critical criteria looked at by the PAT include parameters affected by the selection of components, production process, or variance in system architecture.

Installation Test and Evaluation Post installation system initialization and support may be provided as needed.

9.2 T&E Schedule

Pre Production testing was successfully completed on the First system, January 9, 1996

OT&E Testing was successfully completed February 6, 1996 at FAATC

Shakedown Testing was successfully completed in Montgomery, AL on April 11, 1996

9.3 T&E Responsibility Matrix

9.3.1 Government Test Organization

Government test and evaluation responsibilities are summarized in table 9-1. Descriptions of the roles and responsibilities of each organization involved in test and evaluation activities follow the summary tables.

9.3.1.1 Voice Switching and Recording Product Lead (PL)

The FAA product lead (PL) is responsible for the overall management of the project. Responsibilities related to the test product include arranging for T&E support from the associate product lead for test (APLT), joint preparation of the test and evaluation master plan, obtaining approval from the Test Policy Review Committee (TPRC) for the test product and approval of budgets to fund T&E activities. In addition, the PL is responsible for monitoring test activities through deployment readiness review (DRR).

9.3.1.2 Associate Product Lead for Test (APLT)

The associate product lead for test, assigned from the FAA Technical Center (FAATC),Voice Switch Automation Division, is responsible for supporting the PL in all test related matters. As the PL agent for T&E, the APLT is responsible for managing the overall test and evaluation product including maintenance of the test schedule, coordination of tests, and ensuring that all test requirements are met. The APLT is responsible for co-authoring and implementing the test product prescribed by the VSBP TEMP. Responsibilities related to implementing the test product include monitoring the selected contractor's testing, developing and implementing the Operational Test and Evaluation

(OT&E)/Integration and OT&E/Operational test phases, monitoring the OT&E/Shakedown testing, and making recommendations to the PL and DRR Executive Committee (DRR/EXCOM).

9.3.2 Contractor Test Organization

The organizational structure, including key technical and management personnel, that will support the contractor test program will be identified prior to initiation of the testing program.

9.4 T&E Field Support Requirements

VSBP implementation at operational sites will take place on a non-interfering basis as coordinated with the regionally appointed Technical On-site Representative (TOR).

9.4.1 Personnel Requirements

T&E personnel will be required to support implementation during off-peak hours.

9.4.2 Test Equipment Requirements

The standard voice switch tools, test equipment, and test jigs will be used for installation, testing, and maintenance activities on the VSBP during installation and site acceptance.

Test equipment required for FAA Operational Test and Evaluation (OT&E)/Integration and OT&E/Operational testing will be identified in the Site Integration Test Plan developed by ACT-340, Voice Switching Automation Division. Test equipment requirements for OT&E/Shakedown and Field shakedown testing will be identified in the Shakedown Test Plan by AOS-260, NAV/COM Support Engineering Branch.

9.4.3 System Access

T&E personnel will require access to the facility control tower/TRACON. The Technical Onsite Representative (TOR) will be responsible for providing badging and briefings for installation personnel during site installation visits, as required.

9.4.4 Space Requirements

Space requirements to support activities will be identified as an appendix to the Site Installation, Integration, and Acceptance Test Plan (SIIATP). Space requirements to support OT&E/Integration and OT&E/Operational testing will be identified in the Site Integration Test Plan developed by ACT-340, Voice Switching Automation Division. Space requirements to support OT&E/Shakedown and Field Shakedown testing will be identified in and the Shakedown Test Plan by AOS-260, NAV/COM Support Engineering Branch.

9.5 T&E Program Status

All pre-production testing has been successfully completed.

9.5.1 Test Results Summary

Test reports are on file and available.

9.5.2 Outstanding Program Trouble Reports (PTR)

Resolution of PTRs will follow the discrepancy correction process outlined below.

9.5.3 Discrepancy Correction Process

Where the contractor has obtained test results that do not indicate verification of requirements, the contractor will log the discrepancy in accordance with the Test Procedures. The contractor will determine the cause for the noncompliance and report it to the government prior to submission for retest. All corrective action will be the responsibility of the contractor. On any retest, the contractor will be responsible for identifying the cause of the problem, identifying a solution to the problem, and proposing the fix to the government. The government will approve all corrective action before it is taken, and all corrective action will be completed prior to submission for retest. The retest will be conducted in accordance with the original test procedure or as approved by the government.

9.6-9.19 Reserved

9.20 Status Assessment

No test and evaluation risks have been identified at this time and all pre-production testing has been successfully completed.

10.0 SYSTEM SUPPORT

10.1 System Support Concept

VSBP maintenance support will be accomplished by preventive and corrective maintenance. Preventive maintenance will be accomplished while performing corrective maintenance actions. Corrective maintenance involves site and depot level maintenance, supply support, and technical assistance.

Site Level Maintenance will be accomplished at each site by FAA site maintenance technicians. Site level maintenance involves troubleshooting failures to the lowest replaceable unit (LRU) and replacing failed items with operative spares. It also involves replacement of expendable components (such as fuses) and performing preventive maintenance actions on the VSBP equipment.

Depot Level Maintenance on hardware and firmware components will be accomplished by the contractor for the duration of the contract, or until the FAA assumes responsibility for depot level repair.

- Emergency (Priority 1) replacement will require the shipment of serviceable components so that they are received at the Government site where required, within 24 hours, including weekends and holidays, after receipt of a request from the site.
- Routine (Priority 5) replacement will require the repair of faulty LRUs to be completed within thirty (30) calendar days after receipt of failed LRUs by the FAALC. LRUs will be repaired to restore them to a serviceable operating condition meeting the performance requirements of the VSBP Specification. All repaired LRUs will successfully undergo a system level test prior to shipment to the site.

Supply Support for VSBP spares will be provided by the FAA Logistics Center (FAALC). Failed LRUs will be shipped from the site to the FAALC to the contractor for repair. Serviceable spares will be returned to the FAALC and placed in stock. Supply support will be provided by the FAALC.

Technical Assistance will be provided by the contractor to AOS-260, NAV/COM Engineering Branch, at the FAALC.

10.1.1 Hardware

Preventive and corrective maintenance actions on VSBP equipment will be accomplished by the AF technicians on site. Preventive and corrective maintenance actions will enable the VSBP to meet and/or recover the characteristics specified in the functional specification. These maintenance actions will be accomplished by the performance of maintenance tasks which require a minimum of downtime and human involvement and which use proven techniques and existing equipment.

Maintenance tasks to be performed by the technician will be restricted to those tasks required to accomplish on-site preventive and corrective maintenance tasks. No LRU repair will take place below depot level. The FAALC will ship a serviceable LRU to the VSBP site upon request. Failed LRUs will be shipped by the site to the FAALC, and failed LRUs that are non-expendable items will be shipped to the contractor for repair.

The FAALC will be responsible for providing depot level support until the VSBP is replaced. Details of the hardware maintenance concept are contained in the VSBP Integrated Logistics Support Plan and the VSBP Maintenance Requirement Document.

10.1.2 Software

N/A

10.2 Special Support Facilities

No special requirements for government support facilities have been identified.

10.2.1.1 Restoration Response Level

N/A

10.2.1.2 Field Level Maintenance

N/A

10.2.1.3 Depot Level Maintenance

Contractor repair service will be managed by the FAA Logistics Center (FAALC). The FAALC will provide supply support for VSBP sites. This involves acting as a clearinghouse for VSBP spares. VSBP sites will send failed LRUs to the FAALC and will receive a replacement LRU from Depot stock. The FAALC will forward the failed LRU from the site to the contractor for repair. The contractor will repair LRUs and return them to the FAALC, where they will be returned to stock.

10.2.1.4 Engineering Support

Second level engineering support will be accomplished by AOS-260, NAV/COM Support Engineering Branch, a tenant organization at the Aeronautical center.

10.2.2 FAA Technical Center

This section is NA to this document. The FAA Technical Center will not perform system support activities for the VSBP program.

10.3 Materiel Support

10.3.1 Project Materiel

The FAA Logistics Center (FAALC) will provide supply support for the VSBP project. They will act as a middle man between the sites and the contractor's depot level repair facility to expedite handling of any failed VSBP LRUs. They will also act as a distribution center for VSBP site spares, re supplying site stock as it is depleted. The contractor will provide depot level repair maintenance on hardware, firmware, and software components for the duration of the contract.

10.3.2 Provisions and Supply Support

The initial stock of spare and repair parts for both sites and the FAA Logistics Center (FAALC) will be funded by the VSBP program office, AND-320. A consolidated list of all spares requirements has been provided by the Program Office for provisioning.

10.3.3 Packaging, Transportation, and Storage

All VSBP equipment and spares delivered to sites will be packaged and marked in accordance with ASTM-D-3951, MIL-STD-2073-1, and MIL-STD-129. VSBP equipment and components shipped to the FAA Logistics Center (FAALC) for storage will be individually packaged. Common hardware items will be packed in multiple unit pack quantities as supplied through retail trade channels. A more detailed description of packaging requirements can be found in Section D, Packaging and Marking, of the VSBP contract. Failed LRUs shipped from the site to the FAALC will be packed in the container used to ship the replacement LRU from the FAALC to the site. The FAALC will use reusable containers to pack and ship Exchange and Repair (E&R) items to the contractor for repair.

All materials to be stored at the FAALC will be handled and marked according to MIL-STD-129L. The exterior shipping container will also be marked with the serial number, part number, warranty expiration date, contract number, and contract line item number.

The FAALC, VSBP site personnel, and the contractor will use established FAA guidelines for shipping and transporting VSBP material by the most economical means available.

10.4 Technical Documentation

10.4.1 Hardware Documentation

A Technical Instruction Manual with baseline drawing package will be sent out with each system.

10.4.2 Software Documentation

NA

10.4.3 Procedural Documentation

The contractor will supply a technical instruction book to support system installation, troubleshooting, and site maintenance. The technical instruction book will document complete installation, operation, and site maintenance of all VSBP hardware and will include a level of detail that will provide a thorough understanding of all VSBP functions. The manual will allow an VSBP technician to isolate the failure to the LRU level. A single unbound, camera ready reproducibility quality copy of the technical instruction book will be delivered to AOS-260, Navaids/Communications Support Engineering Branch. One magnetic copies will be delivered to AOS-260 on a 3.5" or 5.25" DOS-compatible floppy disk. One of the magnetic copies will be in Microsoft Word 6.0 format. The technical instruction book will be reviewed for completeness and accuracy by ANC-600, ASU-330, AOS-260, AML-130, AFR-302, and ESC/TGN. After final approval the contractor will deliver two copies to each FAA Regional Headquarters and one copy to each site. No restriction will be placed on the reproduction or use of the operator's manual or associated materials.

10.5-10.19 Reserved

10.20 Status Assessment

Additional or special system support facility requirements, beyond those normally provided at the FAA Logistics Center, are not anticipated. No system support issues/risks have been identified to date.

11.0 PROGRAM SCHEDULE INFORMATION

11.1 NAS Implementation Schedule

Please refer to figure 11-1 for the VSBP NAS

Implementation schedule. All "T±" dates are given in months.

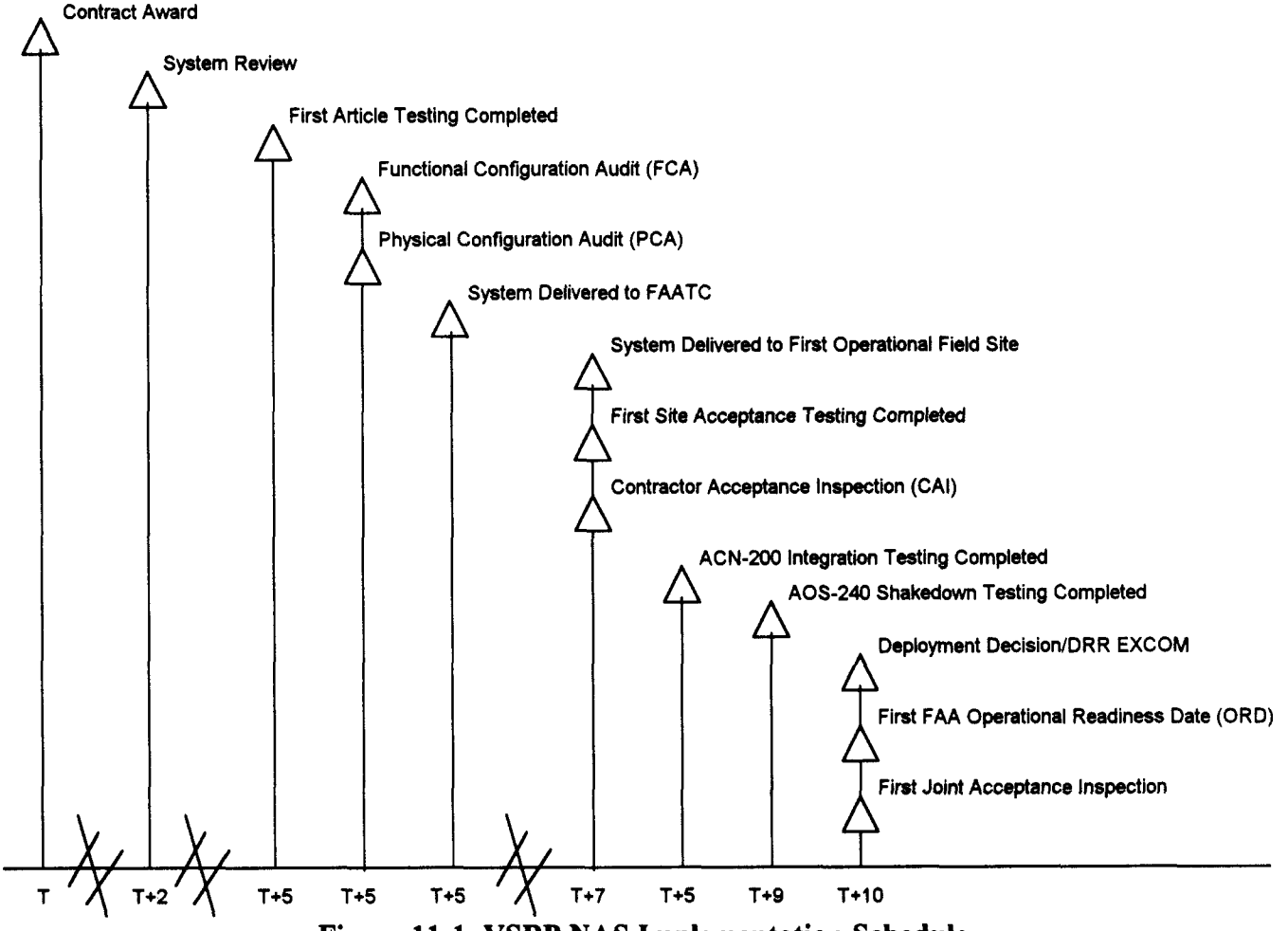

Figure 11-1 VSBP NAS Implementation Schedule

11.2 Deployment Schedule

All FAA sites designated to receive an VSBP have been identified. VSBPs for ETVS sites will be shipped in conjunction with the ETVS schedule. VSBPs for the other TVSR program sites are shipped on a schedule determined by regional priority. Department of Defense sites have nit yet been identified.

11.3 Site Implementation Schedule

Activities to support VSBP site implementation will begin about three months prior to equipment delivery. Differences in potential switch sizes, configurations, and operational site configurations exist. The time and resources required to achieve each of these milestones can range considerably and each

installation schedule must be developed individually. The Generic Site Implementation Plan (GSIP) found in Appendix A, provides a list of tasks that can be used in development if installation schedules for each site.

11.3.1 Region/Site Critical Path Activities

NA

11.3.2 Headquarters Critical Path Activities

The critical path activities for headquarters are the validation of new requirements, and the issuance of site worksheets, collecting information, and ensuring contract modification to the contract.

11.3.3 Vendor Critical Path Activities

The Vendor critical path is to order and obtain resources, assemble and test equipment, and shipment.

11.4 Schedule Dependencies

VSBP implementation is not dependent on the completion of any other projects.

11.5-11.19 Reserved

11.20 Status Assessment

NA

12.0 ADMINISTRATION

12.1 Acquisition Program Summary

The VSBP is a Sole Source Small Business 8A Set Aside Contract. The VSBP is Government furnished property (GFP), and is an Indefinite Delivery Indefinite Quantity (IDIQ) contract. The contract was awarded in August 1995.

12.1.1 Market Survey

NA

12.1.2 Acquisition Strategy

NA

12.2 Contracting Information

The VSBP is a Sole Source Small Business 8A Set Aside Contract.

12.2.1 Prime Contract

Contract was awarded in August 1995.

12.2.2 Service Contracts

No service contracts have been identified at this time.

12.2.3 Program Support Contracts

NA

12.2.4 Regional Contracting

NA.

12.2.5 GFP/GFI/GFE Obligations

Upon receipt at the facility location, the VSBP is Government furnished Property (GFP)

12.3 Program Management (PM)

12.3.1 PM Charter

The AND-320 Product Lead (PL) is the FAA executive responsible for the Voice Switching and Recording Program. The PL is responsible for providing direction for the development, budgeting, acquisition, testing, product improvement, and fielding of this program. The PL serves as the spokesperson for this program with international organizations and foreign governments, other Federal departments and agencies, aviation user groups, the general public, and Congress.

12.3.2 Program Management Team (PMT)

See table 12-1, VSBP/AND-320 Program Management Team, for the names and telephone numbers of personnel supporting the program manager on the VSBP project.

AND-320 Integrated Product Team

Name	Routing Symbol	Role	Telephone
Stephen R. Dash	AND-320	Program Manager for Voice Switching and Recording	(202) 358-5041
Curtis Perry	AND-320	APM Engineering	(202) 358-5074
Anna Burner	ANS-700/NISC	APM NAS Implementation	(202) 646-2183
George Clark	AFR-302	APM Logistics	(202) 651-3018
Steve Curran	ACN-200C	APM Test	(202) 267-8161
Alfred Moosakhanian	ASE-200	APM Systems Engineering	(609) 485-6779
TBD	TBD	APM Quality	(202) 646-2352
James R. Blades	ABU-330	APM Contracts	TBD
George P. Kinsey	AGC-510	APM Legal	(202) 358-5083
Susan Bryant	ATR-3	APM Air Traffic Requirements	(202) 267-7564
			(202) 267-9183
			(202) 651-3225

Table 12-1 VSBP/AND-320 Program Management Team

12.3.3 Program Status Reporting

NA

12.3.4 Exception Management

It is the intention of the VSBP project management that there be a free exchange of ideas between the contractor and the government at all technical reviews, audits, and Technical Interchange Meetings (TIMs) in order to establish program progress, identify resolve issues. TIMs may be held at the request of the government or the contractor to discuss in detail any technical or AFIRMT issues that require resolution or further clarification.

12.4 Quality Assurance

The contractor for the VSBP program will establish and maintain a Quality Control Program in accordance with FAA-STD-013E, Quality Control Systems Requirements, and the contractor's Quality Control System Program Plan (QCPP). The QCPP describes the contractor's plans for quality control, inspection, and test of all materials to be supplied under the VSBP program.

12.4.1 Program Acceptance Criteria

NA

12.4.2 Risk Management

The risk management process will involve the identification, analysis, evaluation, mitigation, and monitoring of risks associated with the implementation of the VSBP project. Risk management begins

with the identification of risks to the program. Risk areas to be assessed include technology, design and engineering, support, manufacturing and production processes, producibility, cost, and schedule. Risks can be identified through any source providing insight into the program.

12.5 Configuration Management (CM)

12.5.1 CM Responsibilities

Configuration management procedures are prescribed by FAA Order 1800.8F, National Airspace Configuration Management. The contractor will establish, implement, and maintain a formal Configuration Management (CM) program on all hardware and software configuration items of the VSBP in accordance with the provisions of FAA-STD-021. The contractor will specify an individual who shall serve as a single point of contact for all CM related issues.

Configuration Management Plan The contractor will develop a single Configuration Management Plan (CMP), Data Item Description B01. The plan will describe in detail the CM methodologies for baseline identification and control, status accounting and auditing of hardware, documentation, and support equipment. Procedures specifying the techniques and identifying the steps and forms required to accomplish CM activities will be provided. The CMP will detail the contractor's internal interface responsibilities with program management, systems engineering, Quality Assurance (QA), Test and Evaluation (T&E), logistics, training, and site installation activities. The CMP will address configuration audit planning and procedures.

Configuration Control The contractor will develop and implement detailed procedures by which configuration control is accomplished. The contractor will extend configuration control to cover hardware, software, firmware, and documentation. The contractor will establish a Configuration Control Board (CCB) to support baseline management. The contractor will maintain traceability and currency of the baseline and consistency among all project documentation, hardware, software, firmware, and documentation and their respective versions.

Changes to the approved baseline will be submitted to the Contracting Officer in accordance with FAA-STD-021, as applicable, relating to Engineering Change Proposals (ECPs) and/or Request for Deviation/Waivers. In addition, the contractor will submit Design Change Notices to implement approved ECPs into provisioning technical documentation. The technical data documentation package will be updated to reflect approved changes. Either the contractor or the government may initiate a change to a proposed or approved baseline.

12.5.2 Configuration Control Boards (CCBs)

The ANC-1 Configuration Control Board (CCB) controls the requirement for changes to project hardware baselines during the acquisition phase. After the VSBP system becomes fully operational, configuration management responsibility will transition from ANC-1, Communications and Aircraft Acquisition, to AOS-260, Navaids/Communication Support Engineering. Approval authority for all VSBP modifications will shift from the ANC-1 CCB to the maintenance engineering CCB at the same time.

12.5.3 CM Milestones

Please refer to figure 12-1 for VSBP configuration management milestones. All "T±" dates are given in months.

12.5.4 Configuration Items

The contractor will select configuration items in accordance with FAA-STD-021. The contractor will implement and maintain a system to identify, label, serialize, and mark both Hardware Configuration Items (HWCI) such that traceability is maintained between all representations of that item throughout the entire CM life cycle. The configuration identification will be documented in the product baseline.

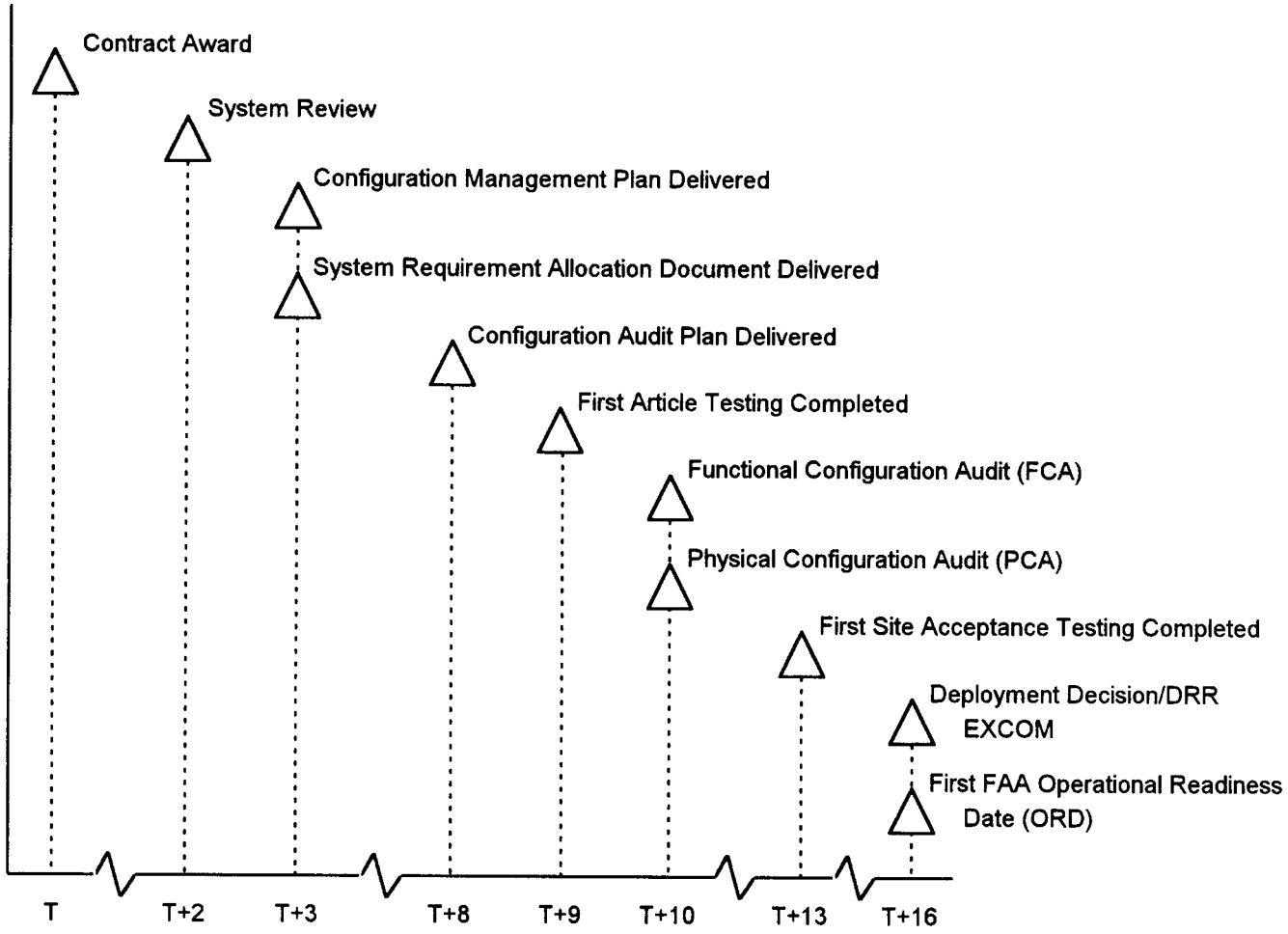

Figure 12-1 Configuration Management Milestones

12.6-12.19 Reserved

12.20 Status Assessment

The VSBP program is similar to other replacement or upgrade projects and, therefore, does not place any additional or unusual administrative or program management requirements on the FAA. No program management risks have been identified to date.

13.0 IMPLEMENTATION (REQUIREMENTS)

13.1 Implementation Support Organization

13.1.1 Associate Product Lead for NAS Implementation (APMNI)

The Associate Product Lead for NAS Implementation (APMNI) comes from the NAS Implementation and Integration Program Branch, ANS-700. The APMNI is a member of the program manager's matrix support team and is the co-chairman of the Implementation Management Team (IMT).

13.1.2 Implementation Management Team (IMT)

The chairman of the VSBP Implementation team (IMT) is the Product Lead. The PL will establish the schedule and agenda for meetings, assign responsibility for the preparation of minutes/reports, and monitor IMT action item closure. The IMT will be responsible for:

- Coordinating PIP and Generic Site Implementation Plan (GSIP) development;
- Supporting identification and incorporation of implementation related requirements into the Program Management Plan (PMP) and procurement documents;
- Validating implementation strategies proposed by the equipment contractor;
- Supporting resolution of program implementation and transition issues through the TIE process; and,
- Facilitating compliance with implementation policy.

The IMT is designed to function as a working entity and is normally comprised of members of the Program Management Team (PMT) augmented by AF Sector and AT Facility personnel from selected implementation sites. Additional members may be named to address specific program needs. The following members of the PMT are actively involved with virtually all of the IMT's deliberations and serve as a core group which supports the PM throughout the implementation process:

- Associate Program Manager for NAS Implementation (APMNI);
- Associate Program Manager for Engineering (APME);
- Associate Program Manager for Logistics (APML);
- Associate Program Manager for Requirements (APMR);
- Regional Associate Program Manager (RAPM) for the lead region/ first site;
- Airway facility sector representatives; and,
- Air Traffic facility representatives.

13.1.3 Regional Associate Program Manager (RAPM)

The primary point of contact in the regions for implementation is the Regional Associate Program Lead(RAPM). The RAPM is the working coordinator for their region in matters pertaining to implementation of assigned programs. The RAPM will interface with all concerned regional offices and will be the VSBP programs regional liaison for VSBP activities. The RAPM will:

- Represent the regional Airway Facilities (AF) Division in identification and resolution of VSBP issues;
- Interface with the headquarters, other regions, the FAA Technical Center, and the FAA Aeronautical Center to coordinate scheduling, planning, installation, and testing;
- Coordinate with regional divisions/facilities on VSBP activities;
- Coordinate the review of VSBP documentation by regional personnel ; and,
- Coordinate distribution of funding within the region for the VSBP project.

Table 13-1 lists the names and phone numbers of the VSBP RAPMs.

13.1.4 Technical Onsite Representatives (TOR)

A TOR will be appointed to witness and participate in the installation, integration, and verification activities at each VSBP site. The TOR will:

- Serve as the focal point for all matters pertaining to site installation activities;
- Identify and coordinate with personnel participating in site preparation and installation;
- Provide installation personnel with access to the site;
- Ensure that contractor installation procedures meet FAA standards;
- Inform the region whenever technical and contractual issues are identified;
- Inform the region on the status of site preparation, equipment deliveries, and installation progress;
- Identify power and grounding connection points, internal facility cable raceways, and buried or hidden utility conduits that would affect the installation effort; and,
- Assist in verification of proper performance of the VSBP during site testing.

VSBP TORs will be assigned by the region after the list of sites receiving VSBP systems has been finalized by ATR-120, Air Traffic Plans and Requirements, Terminal Branch.

VSBP Regional Associate Program Managers (RAPM)

Name	Routing Symbol	Region	Telephone
Doug Edwards	ACE-424E	Central Region	(816) 426-2242
Andy Stasiuk	AGL-421.10	Great Lakes Region	(708) 294-7587
Larry Towles	AWP-422	Western Pacific Region	(310) 297-1425
Jim Cammert	ANM-422.T1	Northwest Mountain Region	(206) 227-2426
Ed Davis	ANE-422	New England Region	(617) 238-7435
Ana Gonzalez	ASW-421.3	Southwest Region	(817) 222-4213
Steven LoVerde	AEA-421.3	Eastern Region	(718) 553-1176
Terry Simpson	ASO-420A	Southern Region	(404) 305-6287
Jerry Jensen	AAL-421A	Alaskan Region	(907) 271-3840

7/12/94

Table 13-1 Regional Associate Program Managers

13.1.5 Contract Support

Local and regional contractor support for site preparation will be secured as needed by the regions. Funding for contractor labor during site preparation will be provided by the region.

13.2 Site Implementation Process

13.2.1 Implementation Planning Phase

13.2.1.1 Implementation Activities

The following meetings and conferences are scheduled to facilitate implementation planning and issue resolution for VSBP.

13.2.1.1.1 Voice Switching Regional Meetings

AND-320 sponsors semi-annual voice switching regional meetings in various locations with regional representatives to collect and disseminate information and resolve voice switch implementation issues. These meetings are announced in advance by memorandum.

13.2.1.1.2 Deployment Readiness Review (DRR)

The Deployment Readiness Review (DRR) defines the managerial strategy used by the VSBP Program Manager to ensure the VSBP program is ready for integration into the NAS and the regions are prepared to receive VSBP systems. Order 1800.63, National Airspace System (NAS) Deployment Readiness Review (DRR) Program provides the policy as well as the programmatic aspects of the FAA review to ensure the project is ready to be integrated into the NAS, and that the FAA is ready to receive, utilize, and provide life-cycle support. The Program Manager for Deployment Readiness Review, ALM-100, supports the program manager's DRR efforts and assures conformance to and management of the DRR program per Order 1800. 63. The Deployment Readiness Review (DRR) process involves an initial DRR review to identify deployment issues, preparation of a DRR report at the conclusion of operational

shakedown testing at the first site, conducting a teleconference with DRR team members to review the DRR report, holding a DRR pre brief with the DRR Executive Committee (EXCOM) chairperson and members, and conducting a DRR EXCOM meeting, during which the deployment decision is made. VSBP Program received DRR approval on June 20, 1996. Table 13-2 lists DRR team membership.

VSBP Deployment Readiness Review (DRR) Team Members

Organization	Routing Symbol
Associate Administrator for Airway Facilities (chair)	AAF-1
Associate Administrator for NAS Development	AND-1
Associate Administrator for Air Traffic	AAT-1
Associate Administrator for Human Resource Management	AHR-1
Associate Administrator for System Engineering and Development	ASE-1
Associate Administrator for the Aeronautical Center	AMC-1
Director, Communications and Aircraft Acquisition	ANC-1
Director, Systems Maintenance Service	ASM-1
Director, NAS Transition and Implementation Service	ANS-1
Director, Operational Support Service	AOS-1
Manager, Airway Facilities Division, Eastern Region	AEA-400
Manager, Airway Facilities Division, Southwest Region	ASW-400
Manager, Air Traffic Division, Eastern Region	AEA-500
Manager, Air Traffic Division, Southwest Region	ASW-500

Table 13-2, VSBP DRR Team Members

13.2.1.1.3 AF Integrated Requirements Management Team (AFIRMT) Program Planning

Communications Life-Cycle Division, AFR-302 will schedule AFIRMT meetings on a semiannual basis to discuss and resolve maintenance, training, and other logistics issues. The AFIRMT will provide a means for coordinating, monitoring schedules and contract performance, and assessing AFIRMT program progress. AFIRMT meetings will be held at the vendor's facility or at government facilities as ordered by the government.

13.2.1.1.4 System Review

The VSBP is a non- developmental project, for which the various design reviews normally conducted on a developmental project are not required. Instead, the project office will conduct preliminary and final system reviews with the vendor, during which the vendor will present a production system configuration to be approved by the Government.

13.2.1.1.5 Training Guidance Conference (TGC)

NA

13.2.1.1.6 Provisioning Planning

NA

13.2.1.1.7 Project Management Reviews (PMR)

NA

13.2.1.1.8 Test Readiness Review (TRR)

NA

13.2.1.1.9 Technical Interchange Meetings (TIMs)

At the request of the government or contractor, TIMs may be held at government or contractor's facility to discuss any issues, e.g., technical, logistics, and training, that require resolution or further clarification. The contractor will make the VSBP equipment accessible to the Government during the TIM. Written or telephonic notification of the need for a TIM must be initiated no later than three days prior to the desired date.

13.2.1.1.10 Implementation Management Team (IMT) Meetings

Timing of IMT meetings is driven by program requirements. At a minimum, however, the IMT will formally convene prior to the issuance of each PIP during each phase of the procurement process and before each Transition Information Exchange report is issued. While all members of the IMT are invited to attend, participation is determined by the specific agenda items.

13.2.1.2 Requirements

NA

13.2.2 Pre-Installation and Checkout Phase (Pre-INCO)

NA

13.2.2.1 Implementation Activities

The VSBP site implementation phase includes FAA and contractor site surveys, site preparation activities, and delivery of equipment. The purpose of the FAA site survey for VSBP is to identify the level of site preparation required. Site preparation involves repairs, refurbishments, and other actions to make the site ready to accept the installation of VSBP. The purpose of the contractor site survey for VSBP is to identify the baseline system configuration for the site. This information will be confirmed by the program office, and will be used in constructing and assembling an appropriate system for the site.

13.2.2.1.1 FAA Site Survey

The FAA site survey will be conducted jointly by the appropriate AXX-400 and AXX-500 branches of the region responsible for the site. The site survey will require the verification of site drawings and the completion of worksheets to be provided by the VSBP Project office. Upon completion of the site survey materials, AXX-400 and AXX-500 will meet with the TOR, local air traffic, and airway facilities

personnel to finalize the survey materials. When the survey is complied the region can initiate engineering and site preparation activities. Data to be furnished for the site survey will include:

- Number of operator positions;
- Number and configuration of A/G frequencies to be connected to the VSBP;
- Assignment of circuits and frequencies to positions;
- Cable lengths:
- Name and telephone number of site TOR, if available, or else the name and telephone of a regional representative with whom implementation issues may be coordinated until a TOR is named.
- Facility shipping address.

13.2.2.1.2 Contractor's Site Survey

NA

13.2.2.1.3 Site Preparation Tasks

The region is responsible for managing the engineering and accomplishing the site preparation as outlined in the subparagraphs below. The region will be responsible for:

- Determining material shortfalls based on review of VSBP Project Material List (PML) data and generating project status reports. Project specific Project Status Reports (PSR) will be established as required by the regional F&E personnel. In order to establish a material requirements baseline, a PML for the VSBP will be loaded into the FAA Logistics Center resident Project Material Management System (PMMS). Any shortfalls in material needs for regions and individual sites that exist will be determined from PMMS data. PSRs will be initiated as required following review of the PML data by regional and site F&E personnel;
- Providing necessary floor space for VSBP installation;
- Main power to the VSBP will require separate breaker(s). Power for backroom convenience outlets will be provided as standard 110 V, 60 Hz power;
- Ensuring adequate electrical grounding in accordance with FAA-STD-019B, Lightning Protection Grounding, Bonding, and Shielding, and FAA-STD-020, Transient Protection, Grounding, Bonding, and Shielding, by conducting a comprehensive grounding survey and making necessary upgrades or replacements;
- Providing a chassis ground plate (multi-point ground) for the VSBP equipment;
- Ensuring adequate primary lightning protection for the facility and for external lines (both telephone company lines and FAA-owned lines) in accordance with FAA-STD-019B;
- Providing workspace for site survey meetings and site preparation activities;
- Providing to the TOR all approved documentation required for implementation, including telecommunications service requests (TSR), site survey reports, instruction books and site installation, integration, and acceptance plans.

13.2.2.2 Requirements

13.2.2.2.1 Financial Resources

Regions must identify funds for those items not covered under the scope of AND-320 site preparation. AND-320 will fund all materials and parts for site preparation. AND-320 will issue project authorizations (PA) for small dollar amounts up to one year prior to installation to formally establish the site preparation effort to which regions may allocate F&E engineering resources. The PA amount is based on the average level of site preparation needed at VSBP sites. To obtain additional site preparation materials and equipment funding, regions must submit detailed site-specific cost estimates to AND-320.

Site preparation funding is not intended to be used for items such as omnibus support contract labor costs, grounding upgrades to facilities (e.g., ground plane installation, counterpoise), cab modernization costs (e.g., painting, carpeting, patching/grouting, air conditioning), or Telecommunications Management and Operations (TM&O) costs (e.g., circuit retermination, leased voice switch removal).

13.2.2.2.2 Human Resources

An FAA site survey, conducted at an VSBP site, will require the completion of worksheets to be provided by the VSBP project office. The site survey will require the participation of regional Facilities and Equipment (F&E) (AXX-45X) and Air Traffic (AT (AXX-500) personnel, the TOR, and the RAPM.

Site preparation tasks will be completed by AXX-450 F&E personnel. The number of personnel and the amount of time required to complete site preparation tasks will depend on the difference between the required physical site condition and actual physical site condition.

13.2.2.2.3 Physical Facility and Equipment Attributes

The amount of site preparation work required will depend on the difference between the required physical site condition and actual physical site condition. Facilities that meet current FAA standards will require less modification.

13.2.3 Installation and Checkout Phase (INCO)

13.2.3.1 Implementation Activities

The installation and checkout phase for the VSBP includes equipment delivery to the site, installation, integration, and checkout. The equipment is installed and tested by FAA personnel.

13.2.3.1.1 VSBP Delivery

The subparagraphs below identify the responsibilities of the VSBP vendor and the TOR for system delivery.

The vendor will:

- Package and ship the VSBP

The site TOR or other AXX-400 personnel will:

- Ensure that site survey activities are complete in accordance with paragraph 13.2.2.1.1;
- Arrange off-loading facilities for VSBP material and equipment deliveries;

- Ensure that equipment can be moved directly to installation area, or if not, arrange for temporary storage space;
- Arrange for disposal of packing materials and other waste.

13.2.3.1.2 VSBP Installation

The TOR will coordinate the FAA installation of equipment.

13.2.3.1.3 VSBP Verification

NA

13.2.3.1.4 Contract Acceptance Inspection (CAI)

NA

13.2.3.1.5 Facility Reference Data File (FRDF)

The Facility Reference Data File (FRDF) is a file of technical reference data on the characteristics and performance of all FAA maintained or FAA owned facilities. The FRDF serves as an historical record of facility and equipment performance and is used to facilitate day-to-day, periodic, and corrective maintenance activities, technical inspections, management evaluations, and aircraft accident/incident investigations. The regional AF sectors are responsible for updating the FRDF to accurately reflect changes in equipment configuration at a facility, such as after the addition of new equipment. An FRDF section must be established for the VSBP and contain, as a minimum, copies of the CAI and JAI reports, any NAS Change Proposals (NCPs) and Configuration Control Decisions (CCDs) necessitated by VSBP implementation, a list of available equipment drawings, a list of VSBP technical instruction books, and a list of applicable test data documents provided by the VSBP contractor. Equipment drawings, technical instruction books, and test data documents should be readily accessible, but need not be physically included in the FRDF. The FRDF should be updated throughout the installation and testing of the VSBP to ensure that the commissioning requirement for an accurate FRDF is met.

13.2.3.2 Requirements

13.2.3.2.1 Financial Resources

Funding to support AND-320 installation and checkout activities will be provided by the program office. Regional Facilities and Equipment (F&E) and Sector Maintenance (SM) personnel participation will be funded by the region.

13.2.3.2.2 Human Resources

NA

13.2.3.2.3 Physical Facility and Equipment Attributes

NA

13.2.4 Integration Phase

13.2.4.1 Implementation Activities

13.2.4.1.1 OT&E/Integration and OT&E/Operational Testing

OT&E/Integration and OT&E/Operational testing was performed at the FAA Technical Center and the first field site (please refer to section 9.1.1, Government Test Program, for a more detailed description of OT&E/Integration and OT&E/Operational testing). The purpose of integration testing was to ensure that the VSBP will operate effectively with the variety of external equipment to which it will be connected. Operational testing verified the operational effectiveness and user suitability of the VSBP. Although it is not anticipated at sites other than the FAA Technical Center and the first field site, some OT&E/Integration or OT&E/Operational testing may be required at subsequent VSBP sites if interfaces or configurations at those sites cannot be duplicated at the Technical Center. The VSBP vendor generally will not be involved in NAS OT&E/Integration or OT&E/Operational testing, although there are provisions in the VSBP contract for the vendor to provide limited engineering support as may be required.

For NAS OT&E/Integration and OT&E/Operational testing, ACT-340 will:

- Ensure that all necessary equipment, tools, and emulation equipment are available;
- Ensure that the impact of testing on ATC facility operations is minimized;
- Develop Operation Test and Evaluation (OT&E)/Integration and Operational Test Plan which provides procedures to verify the user requirements from the FAA Test and Evaluation Master Plan (TEMP). This test plan will contain the approach to testing, requirements to be tested, management of the test, scheduling information, and resources required to test. The test plan is expected approximately six months prior to the start of OT&E/Integration testing at the FAA Technical Center or first field site;
- Conduct testing, assisted by other government personnel as required;
- Ensure that test failures are analyzed, that necessary corrections are made, and that retesting is successfully completed; and,
- Report NAS integration test results.

13.2.4.1.2 Initial Operating Capability (IOC)

The System Integration Phase of site implementation will end with FAA Sector Maintenance declaration of the Initial Operating Capability (IOC), which defines the point at which VSBP equipment installation and testing have been completed and have met the requirements of the VSBP specification.

13.2.4.2 Requirements

13.2.4.2.1 Financial Resources

Funding for travel and per diem expenses to support AOS-260 and AND-320 system integration activities at the FAA Technical Center was provided by the program office. The program office will also fund ACT-340 and AOS-260 personnel should NAS OT&E/Integration or OT&E/Operational testing be

required at subsequent sites. Regional Associate Program Manager (RAPM), Facilities and Equipment (F&E), Sector Maintenance (SM), and Air Traffic (AT) personnel participating in OT&E/Integration and OT&E/Operational testing at the FAA Technical Center had their travel and per diem expenses funded by the program office. At subsequent sites requiring OT&E/Integration or OT&E/Operational testing, however, participation by regional personnel will be funded by the regions; if required.

13.2.4.2.2 Human Resources

VSBP OT&E/Integration and OT&E/Operational testing at the FAA Technical Center was supported by two representative from ACT-340, one representative from the program office, and one representative from AOS-260. AND-320 representatives attended OT&E/Integration and OT&E/Operational testing to expedite successful test completion and acceptance.

13.2.4.2.3 Physical Facility and Equipment Attributes

13.2.5 Field Shakedown Phase

13.2.5.1 Implementation Activities

The Field Shakedown Phase starts after the Initial Operation Capability (IOC) decision that determines that the VSBP installation and testing have been completed and meet defined requirements. The Field Shakedown Phase will end upon successful completion of the final Joint Acceptance Inspection (JAI) by the appropriate Airway Facilities and Air Traffic personnel.

13.2.5.1.1 OT&E/Shakedown Testing

For the first VSBP field site (not the FAA Technical Center), or other designated key site, AOS-200, National Airway System Engineering Division, performed NAS Operational Test and Evaluation (OT&E)/Shakedown testing on a VSBP that has successfully passed site verification (please refer to section 9.1.1, Government Test Program, for a more detailed description of OT&E/Shakedown testing). OT&E/Shakedown testing is similar to OT&E/Operational testing, but is performed at the site where the VSBP equipment will actually be used. Shakedown testing will ensure that the VSBP performs reliably, meets operational requirements, and can be maintained under actual ATC facility working conditions. The VSBP vendor generally will not be involved in shakedown testing, although there are provisions in the VSBP contract for limited engineering support as may be required. Field shakedown testing, similar to the OT&E/Shakedown testing conducted at the first VSBP field site, will be performed at all subsequent sites. The OT&E/Shakedown testing took place at Montgomery, AL.

For shakedown testing, AOS-200 will:

- Ensure that all necessary equipment and tools are available;
- Ensure that the impact of testing on ATC facility operations is minimized;
- Develop an OT&E/Shakedown Test Plan. This test plan will contain the approach to testing, requirements to be tested, management of the test, scheduling information, and resources required for the test. The shakedown test plan is expected approximately six months prior to the start of OT&E/Shakedown testing at the first field site;
- Ensure adequacy of shakedown prerequisites such as operator and maintenance training, availability of spares, special tools, and test equipment, etc.;

- Conduct tests, assisted by other government personnel as required;
- Ensure that test failures are analyzed, that necessary corrections are made, and that retests are successfully completed; and,
- Report shakedown test results (in particular, to the Deployment Readiness Review Executive Committee, DRR EXCOM).

13.2.5.1.2 Joint Acceptance Inspection (JAI)

The Joint Acceptance Inspection (JAI) is an activity intended to gain consensus of all involved groups that installation and testing of the VSBP have been completed in. The JAI is the acceptance of the VSBP for maintenance and operation by the using organizations (i.e., Air Traffic, Airway Facility, and Sector Maintenance). The JAI is normally the time at which the custody and maintenance responsibilities of equipment is transferred from the contractor to the responsible FAA maintenance organization.

13.2.5.1.3 Operational Readiness Demonstration (ORD)

The Operational Readiness Demonstration, a part of the Joint Acceptance Inspection described above, is a formal demonstration that the VSBP is ready to support real-time air traffic control communications tasks. The ORD demonstrates the readiness of personnel, procedures, hardware, and support services. The ORD will examine the following operational, maintenance, and engineering areas:

- Final refinement of operating procedures, methods, adaptation, and parameters;
- Demonstration of all aspects that involve actual control of air traffic prior to commissioning;
- Verification that VSBP equipment documentation accurately describes the system installed at the facility at the time it becomes operational;
- Verification that sufficient staffing exists and that personnel are sufficiently trained and familiar with VSBP functions and equipment; and,
- Verification that required VSBP logistics support capability has been established and that technical logistics data and support material needed for operational use of the VSBP have been furnished.

13.2.5.2 Requirements

13.2.5.2.1 Financial Resources

Funds provided to AOS-200, National Airway Systems Engineering Division, by AND-320 will be used to cover travel and per diem expenses incurred during OT&E/Shakedown test performance at the first site. AND-320 will also fund AOS-200 participation in Field Shakedown testing activities at subsequent sites. Regional Associate Program Manager (RAPM), Facilities and Equipment (F&E), Sector Maintenance (SM), and Air Traffic (AT) personnel required to support shakedown testing activities at the first and any follow-on sites will be funded by the regions.

13.2.5.2.2 Human Resources

Shakedown testing will require the involvement of one AND-320 and one AOS-200 personnel at the first operational (or other designated key) VSBP site. Involvement at the regional level will include the RAPM, two F&E, one SM, and two AT personnel.

13.2.5.2.3 Physical Facility and Equipment Attributes

All site preparation, equipment installation, and system integration work should be completed prior to the beginning of shakedown testing. No facility modifications should be required by the shakedown testing phase of VSBP implementation.

13.3-13.19 Reserved

13.20 Status Assessment

No implementation issues/risks have been identified to date. Delivery and installation schedules will be established by AND-320 in coordination with each region prior to each contract mod. Multiple system per region will be staggered so as not to impact regional AF or AT personnel resources.

APPENDIX A GENERIC SITE IMPLEMENTATION PLAN (GSIP)

The Generic Site Implementation Plan (GSIP) has been developed as a tool to assist regional and site personnel with development of site specific implementation plans. Regional and site personnel can tailor this activity list to fit their own needs and avoid developing each Site Implementation Plan (SIP) from scratch. The GSIP contains a broad list of anticipated activities necessary for the installation and testing of an VSBP system at a site.

The list is a starting point for identifying those activities required to successfully complete implementation at a specific site. Facilities differ depending on environment (i.e., control tower or TRACON), size, location, age, facility configuration, and operational requirements. Some activities listed in the GSIP, therefore, may not apply and can be removed from the list. Other activities may be added to the list as needed in order to complete the site installation plan. Once tailored for a particular site, the GSIP normally becomes the SIP at that particular site. A suggested outline for a SIP is given below. The SIP outline is organized by the same eleven essential elements found in the PIP and allows for cross referencing of information in the PIP down to the site specific details found in the SIP. Background and related program information already found in the PIP need not be duplicated in the SIP. Following site implementation, information contained in the SIP should be placed in the respective Facility Reference Data File (FRDF).

Number	Planning Phase Description	PIP Paragraph Reference	OPR	Due Date/ Schedule	Labor Category/ Hours	Support Contractor Costs	Travel Costs	Comments
1	Complete/tailor GSIP--determine resource requirements	N/A	AXX-420	months < delivery	20.0 hrs			
2	Identify regional engineer responsible for coordinating FAA site prep		Sector	X months < delivery	1.0 hrs			
3	Identify regional contractor (NISC, etc.) personnel requirements to assist RAPM and engineer in completing GSIP tasks.		AXX-420 AXX-450	X months < delivery	6.0 hrs			
4	Develop specific schedule for site preparation		AXX-450	X months < delivery	10.0 hrs			
5	Complete Worksheets	8.2.1	AXX-450	X months < delivery	16.0 hrs			
6	Identify the AT changes to facility procedures.	4.2	AXX-510	X months < delivery				
7	Identify the AF changes to facility prodecures.	3.2	AXX-450	X months < delivery				
8	Update affected facility drawings to the "As built" configuration.	6.9	AXX-450	X months < delivery				
9	Identify site installation team	13.1	AXX-450	X months < delivery				
10	Identify attendees for training courses required	8.3	RAPM	X months < delivery				
11	Determine if any existing equipment needs to be relocated to facilitate installation.		AXX-420 AXX-450 Sector	X months < delivery	2.0 hrs			
12	Ensure that generic block diagrams for each site are modified, as required.		Sector	X months < delivery	16.0 hrs			
13	Determine cable runs and wall penetrations		Sector AXX-450	X months < delivery	3.0 hrs			
14	Review cable for all cables and identify cabling specifications		AXX-420 AXX-450	X months < delivery	4.0 hrs			
15	Determine if overhead cable racks and floor runs are available		AXX-450 Sector	X months < delivery	2.0 hours			
16	Determine if there is room in existing cable funs for additional cables		AXX-450 Sector	X months < delivery	2.0 hrs			
17	Determine if any asbestos areas will be affected by installation		AXX-450 Sector	X months < delivery	2.0 hrs			

APPENDIX B TRANSITION INFORMATION EXCHANGE (TIE) SUMMARY REPORT

N/A.

APPENDIX C ACRONYMS

The following acronyms appear in the VSBP PIP:

A/G	Air-to-ground
AAS	Advanced Automation System
AC	Alternating Current
AF	Airway Facilities
AFSS	Automated Flight Service Station
APME	Associate Program Manager Engineering
APMNI	Associate Program Manager NAS Implementation
APMQ	Associate Program Manager Quality
APMR	Associate Program Manager Requirements
APMSE	Associate Program Manager Systems Engineering
APMT	Associate Program Manager Test
ARC	Acquisition Review Committee
ARTCC	Air Route Traffic Control Center
AT	Air Traffic
ATC	Air Traffic Control
ATCT	Air Traffic Control Tower
ATIS	Automated Terminal Information Service
ATS	Administrative Telephone System
BS	Basic System
C	Centigrade
CAI	Contract Acceptance Inspection
CCB	Configuration Control Board
CCD	Configuration Control Decision

CFR	Code of Federal Regulations
CHI	Computer-Human Interface
CIC	Coordinator Instrument Console
CLIN	Contract Line Item Number
CM	Configuration Management
CMP	Configuration Management Plan
CMTP	Contractor's Master Test Plan
COTS	Commercial Off-the-Shelf
CSA	Configuration Status Accounting
CSAR	Configuration Status Accounting Report
CSCI	Computer Software Configuration Item
CTD	Communications Traffic Data
DoD	Department of Defense
DRR	Deployment Readiness Review
DRR/EXCOM	DRR Executive Committee
DT&E	Developmental Test and Evaluation
DVRS	Digital Voice Recorder System
E&R	Exchange and Repair
ECP	Engineering Change Proposal
EDFP	Engineering Data For Provisioning
ESC/TG	Electronic Systems Center Communications and Airspace Management Systems Directorate
VSBP	Integrated Communications Switching System
F&E	Facilities and Equipment
FAA	Federal Aviation Administration
FAALC	FAA Logistics Center
FAATC	FAA Technical Center

FAT	First Article Test
FCA	Functional Configuration Audit
FDC	Flight Data Console
FDCS	Flight Data Console Shelf
FRDF	Facility Reference Data File
FSR	Final System Review
FSS	Flight Service Station
FTS	Federal Telecommunications System
G/G	Ground-to-Ground
GFE	Government Furnished Equipment
GFI	Government Furnished Information
GFP	Government Furnished Property
HAZMAT	Hazardous Material
HCVR	High Capacity Voice Recorder
HVAC	Heating, Ventilation, and Air Conditioning
HWCI	Hardware Configuration Item
Hz	Hertz
ICMLS	Interim Contractor Maintenance and Logistics Support
ICSS	Integrated Communications Switching System
IDF	Intermediate Distribution Frame
IMT	Implementation Management Team
INCO	Installation and Checkout
IOC	Initial Operating Capability
IOT&E	Independent Operational Test and Evaluation
ISDN	Integrated Services Digital Network
ISP	Integrated Support Plan
JAI	Joint Acceptance Inspection

SIMP	Site Installation Management Plan
SM	Sector Maintenance
SP	Separator Post
SPS	Separator Post Shelf
SRAD	System Requirement Allocation Document
STVS	Small Tower Voice Switch
TCS	Tower Control System
TELCON	Telephone Conference
TEMP	Test and Evaluation Master Plan
TGC	Training Guidance Conference
TIE	Transition Information Exchange
TIM	Technical Interchange Meeting
TM&O	Telecommunications Management and Operations
TOR	Technical Onsite Representative
TPRC	Test Policy Review Committee
TRACON	Terminal RADAR Approach Control
TRR	Test Readiness Review
TSR	Telecommunications Service Request
TVSR	Terminal Voice Switch Replacement
USAF	United States Air Force
VA	Volt-Amperes
VFR	Visual Flight Rule
VHF	Very High Frequency

The following FAA organizations are referred to in the VSBP PIP:

ACT-340	Voice Switch Automation Division (APM Test)
ACW-1	Engineering, Integration, and Operational Evaluation Service

AFS-1	Flight Standards Service
AFZ-100	Airway Facility Training Program Division
AGC-510	Contracts and Litigation Branch
ALM-1	Requirements and Life-Cycle Management
ALM-100	Program Management and Planning Division
ALM-200A	Program Manager for Deployment Readiness Review
ALM-300	Materiel Management Division
ALM-700	Communications Life-Cycle Division (APM Logistics)
AMA-433	NAV/COM/ENV Branch, Airway Facilities Division, FAA Academy
AML-130	NAS/NAILS Program Branch, Logistics Automation Division, FAA Logistics Center
AML-600	Supply Management Division
ANC-1	Program Director for Communications and Aircraft Acquisition
AND-320	Integrated Product Team, Acting Lead for Voice Switching and Recording
ANC-600	Voice Switching and Recording Engineering Division (APM Engineering)
AND-1	Associate Administrator for NAS Development
AND-3	Special Assistant, Associate Administrator for NAS Development
ANS-1	NAS Transition and Implementation Service
ANS-200	Facility Program and Transition Division
ANS-300	Special Programs Integration Division
AOS-200	National Airway Systems Engineering Division
AOS-260	NAV/COM Support Engineering Branch

ASE-11	System Maintenance System Manager
ASE-200	Communications System Engineering Division (APM System Engineering)
ASE-3.2	Configuration Management Support
ASE-600	Engineering Specialties and Configuration Management Support Division
ASM-260	Workforce Standards and Analysis Branch
ASU-330	Communications/Aircraft and Weather Branch (APM Contracts)
ASU-424	Quality Assurance Branch (APM Quality)
ATP-120	Terminal Procedures Branch
ATR-1	Air Traffic Plans and Requirements Service
ATR-100	System Plans and Programs Division
ATR-120	Terminal Branch (APM Air Traffic Requirements)
ATZ-100	Training Program Division
ATZ-110	Air Traffic Training Requirements Program
AXX-42X	Regional Resource and Planning Branch (Regional APM)
AXX-45X	Regional Establishment Engineering Branch (Facilities and Equipment)
AXX-46X	Regional Maintenance Engineering Branch (Sector Maintenance)
AXX-5XX	Regional Air Traffic Division

APPENDIX D SITE DEPLOYMENT SCHEDULE

Appendix D (refer to section 11.2, Deployment Schedule) contains the proposed site deployment schedule contained in Part I, Section F, Deliveries or Performance, paragraph F.4.1, Potential VSBP Locations, of the Clearance Record Review version of the Request For Proposals dated April 1994. Delivery dates will be coordinated between Air Traffic Plans and Requirements Service, System Plans and Programs Division, Terminal Branch (APM Air Traffic Requirements), ATR-120 and regional personnel, and will be included after contract award.

FAA Organization VSBP Sites

Facility Location	State	Site Identifier	Proposed Delivery Date
FAAAC	OK	FAA	TBD
FAAAC (Academy)	OK	FAA	TBD
FAATC	NJ	FAA	TBD
ASM-640	OK	FAA	TBD

Alaskan Region ETVS Sites

Facility Location	State	Site Identifier	Proposed Delivery Date
Anchorage-Intl/TRN	AK	ANC	TBD
Anchorage-Merrill	AK	MRI	TBD
Fairbanks/TRN	AK	FAI	TBD

Central Region ETVS Sites

Facility Location	State	Site Identifier	Proposed Delivery Date
Cedar Rapid	IA	CID	TBD
Des Moines	IA	DSM	TBD
Kansas City	MO	MCI	TBD
Kansas City-Dtn.	MO	MKC	TBD
Lincoln	NE	LNK	TBD
Omaha	NE	R90	TBD
Omaha-Eppley	NE	OMA	TBD
Spirit Of St. L	MO	SUS	TBD
Springfield	MO	SGF	TBD
St. Louis	MO	T75	TBD
Waterloo	IA	ALO	TBD
Wichita	KS	ICT	TBD

Eastern Region ETVS Sites

Facility Location	State	Site Identifier	Proposed Delivery Date
Albany	NY	ALB	TBD
Allentown	PA	ABE	TBD
Atlantic City	NJ	ACY	TBD
Baltimore	MD	BWI	TBD
Binghamton	NY	BGM	TBD
Caldwell-Essex	NJ	CDW	TBD
Charleston	WV	CRW	TBD
Clarksburg	WV	CKB	TBD
Elmira	NY	ELM	TBD
Erie	PA	ERI	TBD
Farmingdale	NY	FRG	TBD
Huntington	WV	HTS	TBD
Islip McArthur	NY	ISP	TBD
Midlletown Harrisburg	PA	MDT	TBD
Morristown	NJ	MMU	TBD
N Philadelphia	PA	PNE	TBD
N.Y. Kennedy	NY	JFK	TBD
N.Y. Laguardia	NY	LGA	TBD
Newark	NJ	EWR	TBD
Newport News	VA	PHF	TBD
Niagara Falls	NY	IAG	TBD
Philadelphia	PA	PHL	TBD
Pittsburgh	PA	PIT	TBD
Poughkeepsie	NY	POU	TBD
Reading	PA	RDG	TBD
Richmond	VA	RIC	TBD
Roanoke	VA	ROA	TBD
Rochester	NY	ROC	TBD
Rome-Griff. AFB	NY	RME	TBD
Syracuse	NY	SYR	TBD
Teterboro	NJ	TEB	TBD
Trenton	NJ	TTN	TBD
Washington-Dulles	VA	IAD	TBD
Washington-National	DC	DCA	TBD
White Plains	NY	HPN	TBD
Wilkes Barre	PA	AVP	TBD

Great Lakes Region ETVS Sites

Facility Location	State	Site Identifier	Proposed Delivery Date
Bismark	ND	BIS	TBD
Champaign	IL	CMI	TBD
Chicago-Mid	IL	MDW	TBD
Chicago-O'Hare	IL	ORD	TBD
Chicago-O'Hare	IL	C90	TBD
Cleveland-Hop	OH	CLE	TBD
Columbus Port	OH	CMH	TBD
Columbus Port	OH	CMH	TBD
Dayton	OH	DAY	TBD
Detroit-Met	MI	DTW	TBD
Duluth	MN	DLH	TBD
Evansville	IN	EVV	TBD
Fargo	ND	FAR	TBD
Flint-Bishop	MI	FNT	TBD
Ft. Wayne-Baer	IN	FWA	TBD
Grand Rapids	MI	GRR	TBD
Green Bay	WI	GRB	TBD
Indianapolis	IN	IND	TBD
Kalamazoo	MI	AZO	TBD
Lansing	MI	LAN	TBD
Madison	WI	MSN	TBD
Mansfield	OH	MFD	TBD
Milwaukee	WI	MKE	TBD
Minn.-St. Paul	MN	MSP	TBD
Moline-Quad	IL	MLI	TBD
Muskegon	MI	MKG	TBD
Oshkosh	WI	OSH	TBD
Peoria	IL	PIA	TBD
Pontiac	MI	PTK	TBD
Rochester	MN	RST	TBD
Rockford	IL	RFD	TBD
Saginaw	MI	MBS	TBD
Sioux Falls	SD	FSD	TBD
South Bend	IN	SBN	TBD
Springfield	IL	SPI	TBD
Toledo	OH	TOL	TBD
W Lafayette-Pur	IN	LAF	TBD
Youngstown	OH	YNG	TBD

New England Region ETVS Sites

Facility Location	State	Site Identifier	Proposed Delivery Date
Bangor	ME	BGR	TBD
Bedford	MA	BED	TBD
Boston	MA	BOS	TBD
Burlington	VT	BTV	TBD
Falmouth Otis	MA	FMH	TBD
Manchester	NH	MHT	TBD
Portland	ME	PWM	TBD
Providence	RI	PVD	TBD
Windsor Lock-BDL	CT	BDL	TBD

Southern Region ETVS Sites

Facility Location	State	Site Identifier	Proposed Delivery Date
Asheville	NC	AVL	TBD
Atlanta-Fulton County	GA	FTY	TBD
Atlanta-Dekalb	GA	PDK	TBD
Atlanta-Hart	GA	ATL	TBD
Atlanta-Hart	GA	ATL	TBD
Augusta	GA	AGS	TBD
Birmingham	AL	BHM	TBD
Bristol-Tricity	TN	TRI	TBD
Charlotte-Douglas	NC	CLT	TBD
Charleston	SC	CHS	TBD
Chattanooga	TN	CHA	TBD
Columbia	SC	CAE	TBD
Covington-Greater Cincinnati	KY	CVG	TBD
Daytona	FL	DAB	TBD
Fayetteville	NC	FAY	TBD
Florence	SC	FLO	TBD
Fort Pierce	FL	FPR	TBD
Ft. Lauderdale-Exec	FL	FXE	TBD
Ft. Lauderdale-Intl	FL	FLL	TBD
Ft. Myers SW-RE	FL	RSW	TBD
Greensboro	NC	GSO	TBD
Greer-Spartenburg	SC	GSP	TBD
Gulfport	MS	GPT	TBD
Hollywod-N Perry	FL	HWO	TBD
Huntsville	AL	HSV	TBD
Jackson-Thompsn	MS	JAN	TBD
Jacksonville-Intl	FL	JAX	TBD
Knoxville-McKee	TN	TYS	TBD
Louisville-Bowm	KY	LOU	TBD
Louisville-Stnf	KY	SDF	TBD
Melbourne	FL	MLB	TBD
Memphis	TN	MEM	TBD
Meridian-McCain	MS	NMN	TBD
Miami Intl	FL	MIA	TBD
Miami-Opa Locka	FL	OPF	TBD
Miami-Tamiami	FL	TMB	TBD
Mobile	AL	MOB	TBD
Montgomery	AL	MGM	TBD
Myrtle Beach	SC	MYR	TBD

Southern Region ETVS Sites (continued)

Facility Location	State	Site Identifier	Proposed Delivery Date
Nashville	TN	BNA	TBD
Orlando	FL	MCO	TBD
Orlando Exec	FL	ORL	TBD
Pensacola	FL	PNS	TBD
Raleigh-Durham	NC	RDU	TBD
San Juan-Intl.Verd	PR	SJU	TBD
Sanford	FL	SFB	TBD
Sarasota-Braden	FL	SRQ	TBD
Savannah	GA	SAV	TBD
St. Croix	VI	STX	TBD
St. Thomas	VI	STT	TBD
Tallahassee	FL	TLH	TBD
Tampa-Intl	FL	TPA	TBD
Vero Beach	FL	VRB	TBD
W.Palm Beach	FL	PBI	TBD
Warner Robbins	GA	WRB	TBD
Wilmington	NC	ILM	TBD

Southwest Region ETVS Sites

Facility Location	State	Site Identifier	Proposed Delivery Date
Abilene	TX	ABI	TBD
Abilene-Dyess	TX	DYS	TBD
Albuquerque	NM	ABQ	TBD
Amarillo	TX	AMA	TBD
Austin	TX	AUS	TBD
Baton Rouge	LA	BTR	TBD
Beaumont	TX	BPT	TBD
Corpus Christi	TX	CRP	TBD
Dallas-Addison	TX	ADS	TBD
Dallas-Ft Worth	TX	DFW	TBD
Dallas-Ft Worth	TX	DFW	TBD
Dallas-Redbird	TX	RBD	TBD
El Paso	TX	ELP	TBD
Fayetteville	AR	FYV	TBD
Ft. Smith	AR	FSM	TBD
Ft. Worth-Meacham	TX	FTW	TBD
Houston	TX	IAH	TBD
Houston-Hobby	TX	HOU	TBD
Lafayette	LA	LFT	TBD
Little Rock	AR	LIT	TBD
Longview	TX	GGG	TBD
Lubbock	TX	LBB	TBD
Midland	TX	MAF	TBD
New Orleans	LA	MSY	TBD
New Orleans-Lakefront	LA	NEW	TBD
Oklahoma City	OK	OKC	TBD
San Antonio	TX	SAT	TBD
Shreveport-Regional	LA	SHV	TBD
Shreveport-Barksdale	LA	BAD	TBD
Tulsa-Intl	OK	TUL	TBD
Tulsa-Riverside	OK	RVS	TBD
Waco	TX	ACT	TBD

Western Pacific Region ETVS Sites

Facility Location	State	Site Identifier	Proposed Delivery Date
Bakersfield	CA	BFL	TBD
Carlsbad	CA	CRQ	TBD
Concord	CA	CCR	TBD
Edwards	CA	EDW	TBD
Fresno	CA	FAT	TBD
Goodyear-Phoenix	AZ	GYR	TBD
Grand Canyon	AZ	GCN	TBD
Guam CERAP		ZUA	TBD
Hayward	CA	HWD	TBD
Hilo	HI	ITO	TBD
Honolulu	HI	HNL	TBD
Kahului	HI	OGG	TBD
La Verne-Brackett	CA	POC	TBD
Las Vegas	NV	LAS	TBD
Los Angeles	CA	LAX	TBD
Mesa	AZ	FFZ	TBD
Monterey	CA	MRY	TBD
Oakland	CA	O90	TBD
Oakland North	CA	OAK	TBD
Oakland South	CA	OAK	TBD
Ontario	CA	ONT	TBD
Ontario	CA	O40	TBD
Phoenix-Deer Valley	AZ	DVT	TBD
Phoenix	AZ	PHX	TBD
Phoenix	AZ	P50	TBD
Prescott	AZ	PRC	TBD
Reno-Cannon	NV	RNO	TBD
Sacramento-McClellan	CA	MCC	TBD
Sacramento Metropolitan	CA	SMF	TBD
San Deigo-Gillespie	CA	SEE	TBD
San Diego-Lindbergh	CA	SAN	TBD
San Diego-Montgomery	CA	MYF	TBD
San Francisco	CA	SFO	TBD
San Jose-Reid	CA	RHV	TBD
Santa Ana	CA	SNA	TBD
Santa Monica	CA	SMO	TBD
Santa Brbara	CA	SBA	TBD

Western Pacific Region ETVS Sites (continued)

Facility Location	State	Site Identifier	Proposed Delivery Date
Stockton	CA	SCK	TBD
Torrance	CA	TOA	TBD
Tucson-Davis Mt	AZ	DMA	TBD
Tuscon	AZ	TUS	TBD
Van Nuys	CA	VNY	TBD